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NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING
NORTH CAROLINA DEPARTMENT OF AGRICULTURE
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
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AGRICULTURAL EXTENSION SERVICE

B. W. KILGORE
DIRECTOR

RALEIGH AND WEST RALEIGH

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FOURTH ANNUAL REPORT

YEAR ENDED JUNE 30, 1918

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING
NORTH CAROLINA DEPARTMENT OF AGRICULTURE
AND
UNITED STATES DEPARTMENT OF AGRICULTURE
COOPERATING

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RALEIGH
COMMERCIAL PRINTING COMPANY, STATE PRINTERS
1919

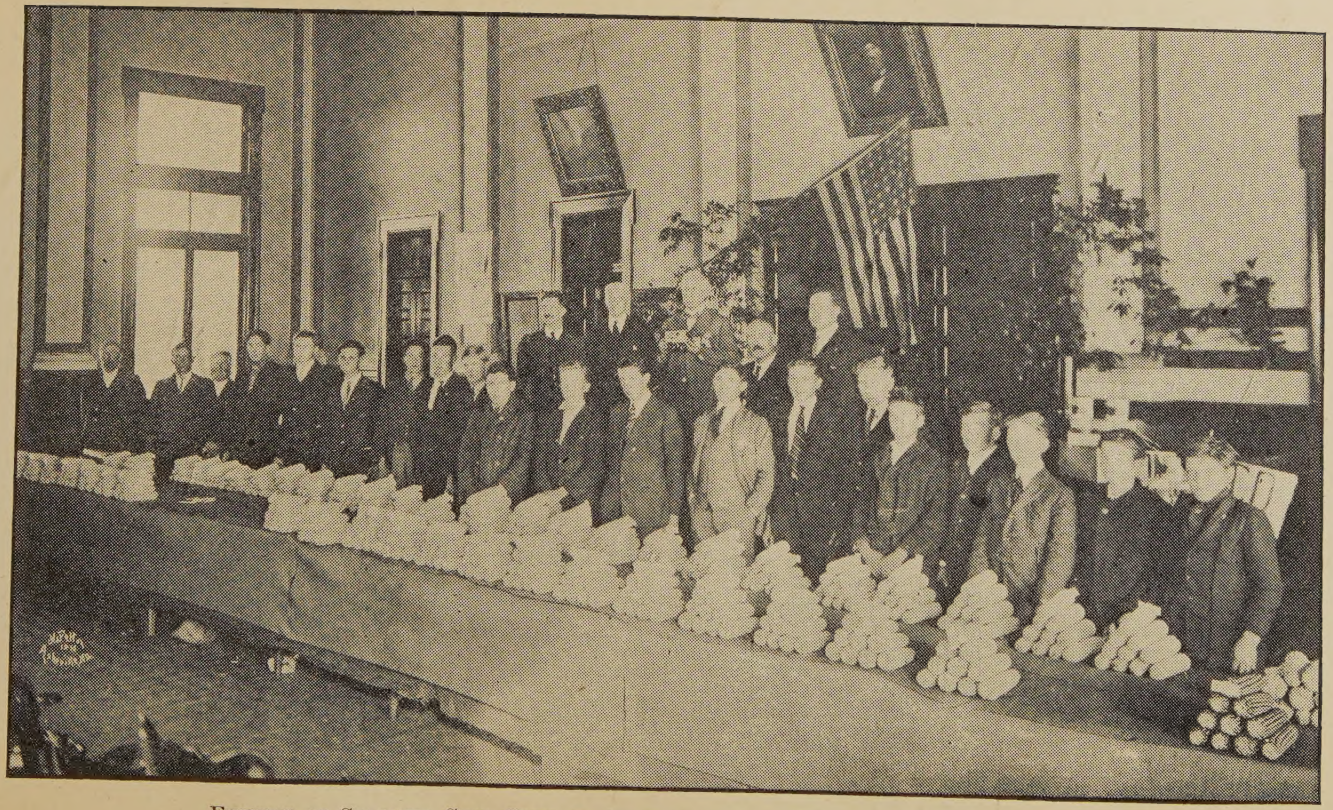


EXHIBIT OF SELECTED SEED CORN BY MEMBERS OF THE BUNCOMBE COUNTY CORN CLUBS

LETTER OF SUBMITTAL

North Carolina Agricultural Extension Service
Office of the Director

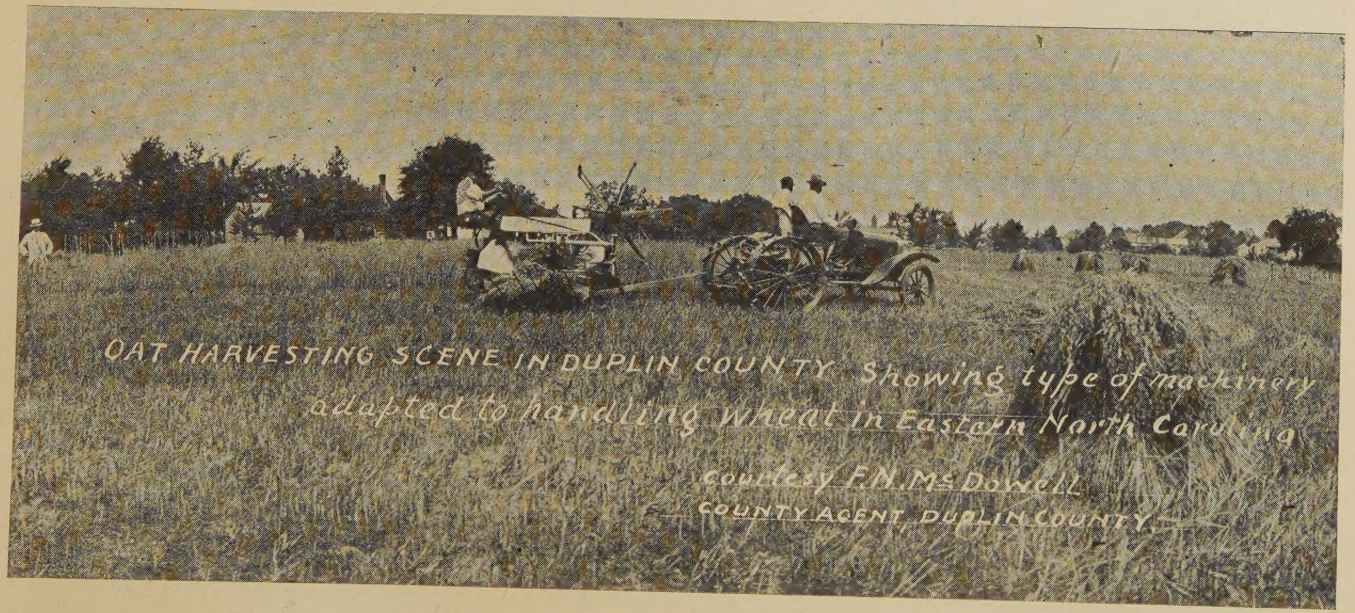
Raleigh, N. C., January 1, 1919.

To His Excellency, T. W. Bickett,
Governor of North Carolina.

Sir:—I have the honor to submit herewith report of the operations of the North Carolina Agricultural Extension Service, conducted jointly by the North Carolina State College of Agriculture and Engineering and the North Carolina Department of Agriculture, in coöperation with the Federal Department of Agriculture, for the year ended June 30, 1918. This work is under the immediate direction of the "Joint Committee for Agricultural Work" provided for in chapter 68 of the Public Laws of 1913, and the report is made in accordance with the requirements of the act of Congress approved May 8, 1914, and known as the Smith-Lever Act.

Very respectfully,

B. W. Kilgore,
Director.



OAT HARVESTING SCENE IN DUPLIN COUNTY. Showing type of machinery adapted to handling wheat in Eastern North Carolina.

Courtesy F.N. McDowell
County Agent, Duplin County

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V. R. Herman.Assistant in Plant Breeding
N. E. Winters....Extension Agronomist
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Specialist in Sugar Plant Production
[2] S. O. Perkins....Assistant in Soil Survey
L. L. Brinkley...Assistant in Soil Survey
[2] E. S. Vanetta....Assistant in Soil Survey
S. F. Davidson...Assistant in Soil Survey
[2] R. C. Jurney....Assistant in Soil Survey
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J. E. Eckert.....Assistant Entomologist
[6] C. L. Sams.....Beekeeping
[6] W. A. Thomas...Extension Entomologist

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B. F. Kaupp,
Poultry Investigator and Pathologist
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[3] J. E. Moses,
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[3] W. W. Shay...Assistant, Swine Extension
[3] J. C. Anthony.Assistant, Swine Extension
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[3] E. C. Warden...Asst. Poultry Club Agent
[3] J. A. Arey.....Asst. in Dairy Farming
[3] F. R. Farnham,
Asst. in Dairy Farming (Cheese Work)
[3] A. C. Kimrey.....Asst. in Dairy Farming
[3] D. R. Noland,
Asst. in Dairy Farming (Cheese Work)
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[3] J. W. Sloss.....Assistant in Beef Cattle
[3] J. B. Peery.....Assistant in Beef Cattle
Earl Hostetler,
Assistant in Beef Cattle and Swine
[3] Albert Miller..Assistant in Beef Cattle
[3] George Evans.....Assistant in Sheep
[3] W. H. Ferguson.....Assistant in Sheep
John E. Ivey.....Poultry Investigations

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*Member Joint Committee for Agricultural Work.

[2] [3] [6] In coöperation with United States Department of Agriculture.

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R. A. JEHLE.....Extension Pathologist
W. H. TISDALE,
Associate, Botany and Plant Pathology

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F. O. BARTEL...Junior Drainage Engineer

VETERINARY

G. A. ROBERTS.....Veterinarian

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BOLLING HALL.....Assistant in Marketing Fruits and Vegetables
GORRELL SHUMAKER.....Assistant in Marketing Fruits and Vegetables

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FARM MACHINERY

E. R. RANEY.....Farm Machinery Specialist

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J. M. GRAY.....District Agent, Mountain District
O. F. MCCRARY.....District Agent, Northeastern District
N. B. STEVENS.....District Agent, Southeastern District

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Ashe..... ————
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Beaufort.....H. H. LAWLEY, Washington
Bertie.....J. C. ANDERSON, Windsor
Bladen.....R. K. CRAVEN, Clarkton
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Camden..... ————
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Cumberland.....W. J. BROCKINGTON, Fayetteville
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Dare..... ————, Manteo
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Davie.....W. F. REECE, Mocksville
Duplin.....O. W. COLLINS, Kenansville
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Gaston.....C. L. GOWAN, Gastonia
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Hoke..... ————, Raeford
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Jackson.....J. C. BRAMMER, Sylva
Johnston.....A. M. JOHNSON, Smithfield
Jones.....E. F. FLETCHER, Trenton
Lee.....R. R. MCIVER, Sanford
Lenoir.....W. T. KYZER, Kinston
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Macon.....R. P. MCCRACKEN, Franklin
Madison.....E. D. BOWDITCH, Marshall
Martin.....J. L. HOLLIDAY, Williamston

[4] } In coöperation with United States Department of Agriculture.
[5] }

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Northampton.....M. W. WALL, Jackson
Onslow.....D. L. LATHAM, Jacksonville
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Pender.....R. T. MELVIN, Burgaw
Perquimans....L. W. ANDERSON, Hertford
Person.....————, Hurdle Mills
Pitt.....J. E. DODSON, Greenville
Polk.....J. R. SAMS, Columbus
Randolph.....D. S. COLTRANE, Asheboro
Richmond..... ————, Rockingham
Robeson.....O. O. DUKES, Lumberton
Rowan.....S. S. STABLER, Salisbury
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Sampson.....H. L. BOYD, Clinton
Scotland ..... ————
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Stokes.....J. H. SPEAS, Danbury
Surry.....EWING MILLSAPS, Dobson
Swain ..... ————
Transylvania....R. E. LAWRENCE, Brevard
Tyrrell..... ————, Columbia
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Wilkes.....A. G. HENDREN, Straw
Wilson.....B. T. FERGUSON, Wilson
Yadkin.....M. W. MACKIE, Yadkinville
Yancey.....F. E. PATTON, Burnsville

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R. J. BEVERLY, Wadesboro.....Anson County
W. D. BROWN, Winton.....Hertford County
OLIVER CARTER, Parmele.....Pitt, Edgecombe and Martin Counties
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R. J. JOHNSON, Warsaw.....Duplin
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H. E. WEBB, Greensboro.....Guilford, Rockingham and Alamance counties
F. D. WHARTON, Henderson.....Vance, Warren and Granville counties
L. H. ROBERTS, Raleigh.....Wake County

HOME DEMONSTRATION WORK

MRS. JANE S. MCKIMMON.....State Home Demonstration Agent
MRS. J. H. HENLEY.....District Agent, Western District
MRS. LIZZIE R. EDGERTON.....District Agent, West Central District
MISS LAURA M. WINGFIELD.....District Agent, Central District
MRS. ESTELLE T. SMITH.....District Agent, East Central District
MRS. CORNELIA C. MORRIS.....District Agent, Eastern District

COUNTY AGENTS

Alamance.....MISS IRMA K. COBLE.....Graham
Anson.....MRS. ROSALIND REDFEARN.....Wadesboro
Beaufort.....MISS DAISY B. PADGETT.....Washington
Bertie.....MRS. W. F. EARLEY.....Aulander
Bladen.....MISS ANNA MARY BAKER.....Elizabethtown
Brunswick..... ———— ..... Southport
Buncombe.....MRS. RACHAEL T. HANAMON.....Asheville
Cabarrus.....MISS SALLIE W. HUNTER..... Concord
Catawba.....MISS MARY J. ROWE.....Newton
Chatham..... ———— ..... Pittsboro
Cherokee..... ———— ..... Murphy
Chowan.....MISS CIRCE COBLE..... Edenton
Cleveland.....MISS BERTHA HERMAN..... Shelby
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Cumberland.....MISS ELIZABETH GAINEY.....Fayetteville
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Duplin.....MISS HELEN THOMAS..... Kenansville
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Franklin.....MISS PAULINE SMITH .....Louisburg
Gaston.....MISS NELL PICKENS .....Gastonia
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Greene.....MISS GRACE STRIBLING.....Snow Hill
Guilford.....MISS OLA STEPHENSON .....Greensboro
Halifax.....MISS ETHEL LEATHERWOOD .....Roanoke Rapids
Harnett.....MISS RACHAEL MARTIN .....Lillington

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Hertford	Miss Myrtle Swindell	Winton
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Jackson	Miss Mary Feimster	Sylva
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Montgomery	Miss Lillian Cole	Troy
Moore	Miss Bertha Proffitt	Carthage
Nash	Miss Allie M. Stribling	Nashville
New Hanover	Miss Florence Jeffress	Wilmington
Northampton	————	Jackson
Onslow	Miss Jane McFadyen	Jacksonville
Orange	Miss Elizabeth Cornelius	Hillsboro
Pasquotank	Miss Marcie P. Albertson	Elizabeth City
Pender	Miss Eva Logan	Burgaw
Perquimans	Miss Helen Gaither	Hertford
Person	Mrs. Lila Melvin Rhyne	Roxboro
Pitt	Miss Mabel Bradsher	Greenville
Randolph	Mrs. Laura Westcott Coggins	Asheboro
Richmond	Mrs. John Sandy Covington	Rockingham
Robeson	Miss Flax Andrews	Lumberton
Rockingham	Miss Mazie Kirkpatrick	Reidsville
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Rutherford	Miss Mary O'Keefe	Rutherfordton
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Transylvania	Miss Lulu M. Cassidey	Brevard
Union	Miss Blanche Carter	Monroe
Vance	Mrs. J. K. Plummer	Middleburg
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Warren	Miss Annie Lee Rankin	Warrenton
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Durham	Mrs. J. M. Whitted
Winston-Salem	Miss Elizabeth Bogle

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A. K. Robertson	Corn Club Agent
A. G. Oliver	Poultry Club Agent
J. E. Moses	Swine Extension Specialist and Pig Club Agent
W. Kerr Scott	Assistant Club Agent

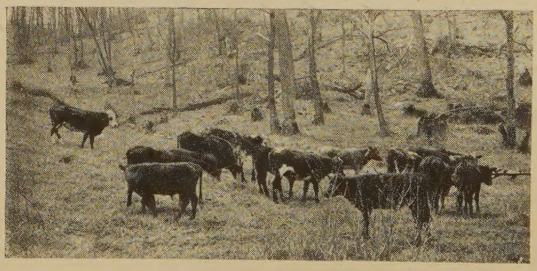

Fig. 3. Steers Grazing on Winter Pasture in Western North Carolina

FOURTH ANNUAL REPORT

OF THE

NORTH CAROLINA AGRICULTURAL EXTENSION SERVICE

FOR THE YEAR ENDED JUNE 30, 1918

BEING THE TWELFTH YEAR OF EXTENSION WORK IN THE STATE

B. W. KILGORE, Director
F. H. JETER, Agricultural Editor

Despite the unusual conditions forced on the Extension Service, due to the participation of the United States in the world war, and the active part played by this State in the successful prosecution of the conflict, the extension workers have endeavored throughout the year to keep the usual demonstration and extension activities at a high point of efficiency, but at the same time to devote a considerable part of their time and energies to aiding in a war time agricultural program.

It should be remembered that a great part of the extension work is done through the men and women agents. Because they were required to do a large amount of unusual work during 1918, in the handling of county food surveys, the distribution of nitrate of soda for farmers, the conserving of food and feedstuffs, aiding in the fight to control influenza, and in the selling of Liberty Bonds and Thrift Stamps, it is probable that not quite as much actual demonstration work was conducted by these men and women as heretofore.

With the county agent work being conducted in 90 counties among white people, by one agent to the county, and in 28 counties by 14 negro agents, the largest number of agents on the roll at any one time was 104 men. During the year 17 of these left the Service by resignation; nine of the vacancies being filled during the year.

In the work with women, the Home Demonstration Agents were at work in 72 counties, and aided in playing a wonderful part in the production and conservation of food during the year.

STATISTICAL SUMMARY

In tabular form, a summary of the year's work shows that 12,871 demonstrations were made in the growing of field crops, and in the economical handling of these; 69,550 demonstrations were made in the growing and handling of all the different classes of livestock; to aid in the controlling of diseases of these animals, and their proper feeding during the winter, 76 dipping vats and silos were constructed; 15,210 animals were dipped with the assistance of the county agents; 21,613 services were rendered in the buying, handling and proper use of fertili-

zers, manure and lime; 199 demonstration home orchards were placed; the agents assisted in the care and handling of 6,300 orchards in which were contained 813,649 trees; they aided in locating, building and furnishing plans for the construction of 2,262 farm buildings; they gave suggestions and help to improve by whitewashing, painting and renovation of 664 farm buildings; 626 water systems were installed by their advice and suggestion on as many farms; the same is true of 618 home lighting systems; home grounds and surroundings were improved by their help on 1,799 farms; the sanitary arrangements of 16,629 farms were improved by the screening of windows, the sanitary disposal of sewage, and by other ways 67 telephone systems were installed by their suggestion and advice; with the aid of the specialists drainage systems were established on 142 farms; 1,390 permanent pastures were either improved or established during the year by their help; of the drainage systems installed a total of 18,708 acres were drained by tile and 9,420 were drained by open ditches; terracing systems were laid out on 1,758 farms, covering a total acreage of 24,135 acres; home gardens were given more than usual attention, and success was had in the establishment of 48,031 home gardens; considerable time and attention was devoted to the use of better farming implements, and the records show that, through the agents' activities 11,468 farm improved implements were brought in; many communities were organized with the aid and assistance of the men and women agents, but accurate reports could not be obtained from all of these, the records showing that 1,134 farmers' organizations, with a total membership of 955 members in four of these were perfected; that the agents and specialists were unusually active during the year, however, is revealed by the fact that 183,623 special visits were made to the homes of individual farmers and schools; in doing this a total of 6,704,149 miles were traveled; farmers made calls on the men and women agents to the number of 126,669; a total of 26,215 meetings were held, and 8,229 meetings were addressed at which, as the records show, there was an attendance of 1,447,122 people.

Since not all of the work could be covered by personal visits and conferences, a large number of letters were written in answer to questions asked by farmers and others, and of those who kept this data, the records show that 212,227 letters were written. It was necessary also, under war conditions, to acquaint the people with many pertinent facts in regard to improved agriculture and food, and in doing this 2,977 articles were written and published in the State and county papers; circular letters to club members and other organizations numbered 822,840, all of which were multigraphed and distributed; the agents and specialists mailed to farmers, on request, 521,677 bulletins; to place the matter of food conservation squarely before the men and women, the Home Demonstration workers held 8,807 food demonstrations; there was a total club enrollment of women, girls and boys of 36,663 members; organized women and girls filled 5,860,700 containers, despite the lean garden

year; they brined 106,405 gallons of food products and dried 228,903 pounds of products; 66,984 bales of cotton were graded for farmers, buyers and cotton mills; at the Annual Short-course the agents and extension workers, in coöperation with the college, gave instruction to 387 members attending; despite the prevalence of influenza which destroyed the fair program of the State, before this epidemic appeared, 250 fairs had been organized with the assistance and by the direction of extension workers, though not many of these fairs were held and only a few judges were furnished; the records show that 593,000 bulletins and circulars were issued through the administrative office; the mailing list of the Extension Service contains 64,000 names; as new work, the agents succeeded in inducing at least 20,000 farmers to plant wheat for the first time, and the women assisted in establishing 132 community canneries.

This statistical summary reveals the fact that in services rendered, miles traveled, bulletins and circulars furnished, and meetings held and addressed, that the extension workers have in some way performed services amounting in number to 18,281,233. In doing this the workers have carried out to the letter the coöperative arrangement of the State College of Agriculture and Engineering with the State Department of Agriculture and U. S. Department of Agriculture.

REVIEW OF ACTIVITIES

Practically all of the activity recorded in this statistical summary has been done by or through the men and women agents at work in the different counties. It was found in 1917 that the organization of the State into five districts for farm demonstration work had proven to be a most logical arrangement, and for this reason the woman's work was similarly organized during 1918, the following being appointed as district agents:

Mrs. J. H. Henley, Western District.
Mrs. Lizzie R. Edgerton, West Central District.
Miss Laura M. Wingfield, Central District.
Mrs. Estelle T. Smith, East Central District.
Mrs. Cornelia C. Morris, Eastern District.

This gives the women the same organization as the men, and permits of much more efficient handling of the different phases of extension work under their charge.

As has been stated, much of the time of all of the extension workers was devoted to emergency problems arising as a result of the world war. The organizations which had been perfected among farmers in the State were used by many agencies to promote a knowledge of the needs of the Government among the people. It was natural that the organized bodies which had been established should be used in this way, and it was due to

this fact, to a large extent, that the Government program was so successful in North Carolina.

Another opportunity to be of service was afforded when the influenza epidemic became prevalent in North Carolina, creating as it did an urgent need for feeding and nursing the sick, and giving them medical attention. Many emergency hospitals were established over the State, and a great number of soup kitchens were conducted in several of the largest cities. The women agents played an important part in this activity, while the men devoted practically all of their time during the epidemic to the furnishing of other assistance and attention to farmers in the rural districts.

However, it was not all emergency work during the entire year. The farmers planted one of the largest food crops recorded in the history of the State, and, though there was considerable lack of labor, these crops were fertilized and cultivated as efficiently as possible. Much attention was given to the increase in production of fats and meats, and a good number of carloads of hogs were brought into the State from other sections, or distributed from one part of the State where there was a surplus, to another section where not many were on hand.

As an example of the activity with food crops, it is estimated that at least 58,000 farmers were induced to use better methods in corn growing, and 24 counties report that the average yields recorded on the demonstration acres in charge of the county agents were from 50 to 75 bushels per acre, which shows that even under conditions of labor shortage the yields were kept up.

More attention was given to wheat also, as 20,000 farmers were induced for the first time to put in a small acreage of wheat. The average yield for the whole State on demonstration areas was around 19 bushels, while in the Coastal Plains those farmers growing wheat under the direction of the county agents report that they made an average of 23 bushels per acre.

The demonstration acreage devoted to forage and hay crops was increased from 300 to 400 per cent during the year. In the matter of pure-bred livestock brought in for breeding purposes, exclusive of poultry, 4,745 animals were bought by farmers of the State through county agents and specialists. This shows some of the interest taken in food production, and the activity was not confined alone to the white farmers, but also included the negroes who, in their reports to their local agents, showed an average yield of 42 1-3 bushels of corn per acre, and other increases in food crops in like proportion.

In the conservation of food, the women labored under more or less of a handicap during the year, as many of them, both the mothers and daughters, had to take their places in the general crops because of the absence of the fathers and brothers in the army. The year 1918 also was a lean garden year in North Carolina. For that reason the report shows that there were only 5,860,700 containers filled. These were

valued at around a million and a half dollars, however, and one million of this was clear profit.

All of the members of the Extension Staff devoted a great amount of their time to the different campaigns in which the Government was engaged, subscribing very largely to the different issues of Liberty Bonds and of War Savings Stamps. They also contributed largely to the funds of the different organizations, such as the Red Cross, Y. M. C. A., etc., and they aided, to a commendable degree, in keeping down the spread of pernicious propaganda having for its purpose the defeat of the Government program.

Many campaigns were inaugurated and pushed to a successful conclusion. These were in the nature of *the production of food and feed crops, the production of meats and fats by increasing the number of hogs in the State, the production of wool and mutton and the saving of the ewe lambs, the production of soybeans and peanuts which contain a high per cent of oil, the increase of interest in honey and bee culture, the production of sugar plants like sorghum, sugar beets, sugar cane and maple syrup, the production of more wheat, the use of cottage cheese as a meat substitute, the increased use of a family cow on the farm, and the use of food substitutes.* All of these campaigns were pushed with the utmost vigor, and most of them were attended with a large degree of success.

CHANGES IN STAFF

There were quite a number of changes in staff during the year, especially among the county agents, as a number of these volunteered or were drafted into the service.

Mr. W. N. Hutt, Chief of the Division of Horticulture, resigned to enter commercial work; Dr. F. A. Wolf, Plant Pathologist, resigned to accept a commission in the army; Mr. Dan T. Gray, Chief of the Animal Industry Division, was given a leave of absence for four months to assist in war work with the Federal Department of Agriculture; Mr. W. Kerr Scott, Assistant Club Agent, resigned to enter the army; Mr. A. K. Robertson, Corn Club Agent, was transferred from Corn Club Agent to County Agent work in Wayne County; Mr. J. A. Arey, Dairy Field Worker, was transferred from Dairy Field work to County Agent work in Iredell County; Mr. Chas. S. Jones was appointed Specialist in Marketing Livestock; Mr. W. H. Ferguson was transferred from County Agent work in Haywood County to Assistant Field Agent in sheep work; Mr. D. R. Noland was secured as Assistant in cheese work; Mr. E. C. Warden was appointed Assistant Poultry Club Agent; Messrs. W. W. Shay and J. C. Anthony were appointed Assistant Swine Extension workers, and Messrs. J. W. Sloss, J. B. Perry, and Albert Miller became Assistants in Beef Cattle work. Mr. W. W. Garnett was added to the organization as Assistant Superintendent of Credit Unions; Mr. N. E. Winters was appointed as Extension Agronomist, due to the resig-

nation of Mr. C. C. Logan, who entered county agent work in another state. Dr. R. A. Jehle was added to the organization as Extension Pathologist; Mr. N. B. Stevens was transferred from County Agent in Halifax County to District Agent in charge of the southeastern district, on account of the death of Mr. R. W. Freeman, formerly in charge of this district. Mr. W. A. Thomas was added to the orgnization during the year as Extension Entomologist.

COOPERATION WITH OTHER INSTITUTIONS AND AGENCIES

Without the splendid spirit of coöperation which has been extended the Extension Service on every hand, it is very doubtful if it could have accomplished in the past year that which the records and farming conditions generally show to be true in North Carolina. The State has gradually increased in the value of its products. Farming conditions, despite the wartime conditions, and the many calls to which the owners have been subjected, show that the farmers are in better financial state than ever before. More mortgages have been paid, more long standing debts wiped out, and more land has been bought in the past few years, especially last year, than in several years before. This has been possible through the good prices received for all produce and because of the encouragement and assistance given the farmer by the different agencies coöperating in the conduct of rural work.

The Extension Service has received the cordial support of the railroads, the press, the schools and colleges, boards of trade, chambers of commerce, and banks. At the same time it has enjoyed cordial working relations with the Negro Agricultural and Technical College at Greensboro, the Normal and Industrial Institute and College for Women at Greensboro, the State Department of Education, and the Farmers' Union.

It can be safely said without fear of contradiction that the press has more than coöperated. It has given freely and without stint of its space and has published articles from the men and women agents in the different counties, as well as the many news items and informational matter sent in from Raleigh headquarters. Several papers have issued better farming specials. Special mention might be accorded the Raleigh *News and Observer,* the Charlotte *Observer,* the Winston-Salem *Sentinel,* the Wilmington *Star* and the Wilmington *Dispatch.*

Several of the leading banks of the State have also coöperated liberally, the Commercial Bank at Raleigh, giving its lobby for a series of agricultural exhibits of different kinds. Other banks, such as the National Bank of Granville at Oxford, the Wachovia Bank and Trust Company of Asheville and the First National Bank of Tarboro, have been of distinct service to the Extension workers in lending funds on liberal terms to promote, among their farmer patrons, some one of the activities of the field workers.

FARM DEMONSTRATION WORK

Due to the emergency fund, county agent work in North Carolina has been enlarged during the past two years, and last year there was, at one time, 104 white and negro men agents at work. Ninety counties were served by white agents, and 28 counties by negro or local agents. During the year 17 resigned to go into other work, or enter the army. At the time of this report 9 of these vacancies had been filled.

Demonstration work in the eastern part of the State suffered a great loss in the death of Mr. R. W. Freeman, who was one of the most efficient men in the organization, and who is deeply missed by his fellow workers.

All during the year the work has been somewhat varied and many

Fig. 4. Farmers Loading Car for Coöperative Shipment of Hogs from Iredell County

times irregular because of war conditions. Despite this fact, however, about as many demonstrations as usual have been conducted, and much new work engaged in. The agents have been called upon to take part in practically every conceivable form of Government war activity. They have made food and feed surveys, organized and conducted Liberty Loan campaigns, collected nuts and shells, promoted the sale of War Savings Stamps, combated German propaganda, fought the influenza epidemic, and, at the same time, have endeavored to conduct their regular work.

The results show that among those farmers who have been coöperators and demonstrators 42 per cent have opened bank accounts and 53 per cent have increased their deposits, 26 per cent have paid off the mortgages on farms, while fully 50 per cent of them are now trading on a cash basis. There is a desire to improve farming conditions on the

part of at least 75 per cent. The work is gradually spreading in influence to the farms of those men who have taken no active part in the demonstration activities.

As result of the 1918 wheat campaign, at least 20,000 farmers were induced to plant wheat for the first time, and the records show that an average of 23 bushels per acre was made in the Coastal Plain, against 19 for the whole State on demonstration areas.

The agents directed 2,014 demonstrations in corn growing from which the average yield was 49½ bushels, and it is estimated that at least 58,000 farmers used better methods of growing corn.

Another good sign as to the value of farm demonstration work can be summarized in the fact that the increase of the demonstration acreage devoted to hay and forage crops has been from 300 to 400 per cent, and that there were 440 demonstration acres of alfalfa from which an average yield of three tons per acre was secured.

The work of the county agricultural agent is being gradually given a place of more and more dignity in the affairs of the State, and many people are now beginning to realize that the work is one of the most important public functions which any county can conduct.

Last year these men rendered over a million services of one kind or another to the citizens of their counties, it being estimated that this has been greatly exceeded during 1918. Farm and farm home conditions are gradually being improved as a result of their activity.

WORK WITH NEGROES

Many of the white agents have aided the negro farmers as greatly as possible in those counties where no negro agents are at work. During the past year, however, there were local agents at work in 28 counties. In two of these, Gates and Scotland, there were no white agents employed. A summary of the negro work shows that they had 2,102 demonstrations in field crops comprising 9,236 acres, and that they advised and helped with 593 orchards, examining 17,332 trees. They also brought in much pure-bred stock. The agent in Sampson County set an example by buying a carload of pure-bred Jerseys for the use of the colored people in his county. Their coöperative efforts in organization has yielded good results. At the present time they have 65 agricultural organizations perfected, and these have done effective work, both in aiding in war work, and in promoting agricultural progress. Over 100 herds of pure-bred hogs have been started by the negro coöperators, and 340 farmers are now growing their pork by the use of grazing crops. At least 1,400 have done field selection of seed, working principally with corn.

That all this work is doing good is shown by 339 negro farmers opening new bank accounts. In many cases they are organizing to borrow money from the banks, aiding their fellow members to obtain this money,

and being responsible for its being repaid. In this way they are rapidly gaining the confidence of the white people among whom they live.

At the present time there are only 14 negro agents at work, but the results accomplished are very encouraging for this extension activity.

HOME DEMONSTRATION WORK

While the Division of Home Demonstration cannot show as many containers filled as last year, its record during 1918 has been really remarkable. Practically the entire work of the Food Administration in reaching the women of the different counties in which the Home Demonstration work is being conducted was done through these women agents. For several years they have worked to build up their community organizations among the women and girls, and these organizations were ready when the Food Administration desired to put on its campaign for the conservation of certain staple food products.

The 72 agents employed in the State gave 8,807 food demonstrations and held 8,250 meetings before an attendance of 826,283 people. This work was done in putting across the food conservation movement. They spent a great part of their time encouraging the use of cornmeal as a substitute for wheat flour, and the use of cottage cheese as a partial substitute for meat. At least 1,500 women reported during the year that they were making this cottage cheese for home use. These 1,500 women made an average of 2,000 pounds per week. Quite a few of them sold it, and one woman who was able to make a very fine cheese, sold from 10 to 15 pounds per week at 35 cents per pound, thus adding greatly to her income.

Work with the colored women was done in 19 counties, where a negro assistant to the white agent was employed for a few months in the year.

During the year the agents organized 16,663 women and girls who did intensive conservation work, and there were 161,523 women who did not care to join clubs, but who attended the lectures and demonstrations, and agreed to produce and conserve according to the Home Demonstration methods. In addition to these, 4,474 colored women were organized in different counties.

The Division took up city home demonstration work in seven selected cities during the year. Five of the women agents so placed, reported a total of 517 meetings, with an attendance of 52,355. Most of this work was done in coöperation with the Chambers of Commerce and other organizations in the respective towns.

An interesting feature of the women's work during the past year was the establishment of 132 community canneries from which an approximate output of 357,688 cans were had. Considerable work was done also with cotton mills; 59 mill owners furthering the work by having it conducted in their mill villages; 20 of these manufacturing concerns placing trained home economics women in the villages to

instruct and aid their employees in the proper preparation of food, and conservation of needed staples.

Possibly the women rendered a greater service to the State during the great epidemic of influenza than in any other single way. The establishment of soup kitchens in many towns meant the saving of hundreds of lives. At the same time it gave careful training in the value of a scientific knowledge of foods, as well as useful training in home sanitary matters and home nursing. The soup kitchens at Asheville and Wilmington were especially successful in that they ministered to a large number of people both in and near the cities. Practically every agent employed by the Home Demonstration Division was called upon to take part in aiding in the control of this epidemic, either by nursing or by handling diet kitchens, and many of them won words of commendation and praise from the State Board of Health and other sources for the efficient service rendered.

BOYS' AGRICULTURAL CLUBS

Approximately 20,000 boys were enrolled as members of the agricultural clubs during the year just passed. This large enrollment was due in part to the interest manifested by the county agents, and to a proclamation issued by Governor T. W. Bickett early in the spring of 1918 calling the reserves to the colors, and requesting all boys between the ages of 8 and 18 to take part in the productive work of the agricultural clubs. A great number of boys, both white and black, joined the clubs, but on account of influenza conditions in the fall, it was practically impossible to get complete reports from all enrolled. The resignation of Mr. A. K. Robertson to go into county agent work also was detrimental in this respect. The resignation of Mr. W. Kerr Scott, to enter an army training camp, was another serious blow to the success of the work for the year.

Impetus was given to the Pig and Poultry Club movements by the addition of Mr. E. G. Warden as Assistant Poultry Agent, and of Messrs. J. C. Anthony and W. W. Shay as Assistants in Swine Extension, aiding in the Pig Club work.

While a full report was not secured from the members, it is felt that they did a great deal in adding to the food supply of the State. The club work office is in receipt of many patriotic letters from these young people telling how they were planning to do their bit for the good of the country.

At the Annual Short-course 387 members were present, it being impossible for the college to accommodate more at that time.

As a part of the negro club work activities, Jno. D. Wray, the Farm Makers' Club Agent, gave attention to the organization of Saturday Service Leagues. Nearly 5,000 members were enrolled in this league, and it is estimated that by saving a half of a day's work each week, these 5,000 members added nearly 2,500 days to the productive labor

supply of the State. In addition to this work Wray did good work among negro families in encouraging the planting of gardens; securing about 17,000 summer gardens and 7,000 winter gardens. His success had much to do with the increased interest in negro club work by the colored people of the State during the year.

AGRONOMY

Agronomy extension work was somewhat hampered during the year by the resignation of Mr. C. C. Logan, Extension Agronomist, and the subsequent elapse of several months time before any worker could be secured for this position.

Extension activities in this Division has to do with problems of soil fertility, the encouraging of leguminous plants in rotation, instructions in sugar plant work, and in community seed improvement. Practically the entire time of one of the Extension Agronomists is devoted to problems connected with soil fertility, this worker spending practically all of his time with the county agents, visiting farms and farmers who wish special information about the needs of their soils. This specialist is provided with a simple apparatus for testing the sourness of soils, and for need of lime. Considerable time was devoted to the question of lime, and assistance was given as to the right kind to buy, together with the freight rates and prices.

Demonstrations have been placed on 11 of the farm-life schools of the State for the purpose of reaching the students and patrons of these schools.

The work with legumes, especially soybeans, has meant an increase of at least 20 to 25 per cent in the acreage devoted to leguminous crops. In many counties where the soybean crop was practically unknown three years ago, an area consisting of from 1,000 to 18,000 acres was planted in 1918.

The work with sugar plants is conducted coöperatively with the Bureau of Plant Industry at Washington, and has for its purpose the encouragement of the growth of sugar beets and sorghum cane, together with the utilization of the maple trees which grow abundantly in the western part of the State. Seed of the sugar beet were sent to about 300 farmers in Ashe, Avery, Watauga, Mitchell, Yancey, McDowell, Buncombe, and Burke counties, with instructions for growing the crop and making the syrup. These demonstration plots were studied for the purpose of finding the kind of soil and the climatic conditions suitable for a high sugar content. The result of this work shows to date that the mountains possess the necessary soil and climatic conditions for the further propagation of this crop. Work is being done with 120 owners of sugar maple trees, and from information available it seems that there are in the mountains not less than 750,000 maple trees which are available for making syrup and sugar. There has been a great increase in

the growth of sorghum during the past year, the average for the State being about 120 gallons of syrup per acre.

In community seed improvement, demonstrations are being made with growers in about 20 communities in 11 counties where special varieties of cotton best suited to the community are being grown. Five communities already have adopted one of the recommended varieties, and the tests show that an average increased income of $26 per acre has been received where these varieties were grown, over the different mixed varieties usually grown.

ANIMAL INDUSTRY

The extension work of the Animal Industry Division has proven to be of more and more value to the State each year. The work is being done with the feeding and handling of beef cattle, sheep, swine, poultry and dairy cows.

FIG. 5. ONE OF THE 26 COÖPERATIVE CHEESE FACTORIES NOW IN OPERATION IN THE STATE

During the past year at least 300 pure-bred beef animals have been distributed in the State by means of sales, and considerable interest has been fostered in the pure-bred cattle business by the different shows and sales which are held. About 40 carloads of high-grade animals were brought in from the drought stricken regions of Texas and distributed in the State. At least 15 silos for feeding beef cattle were built during the past year.

The sheep work has been of immense value, with the field agents placing approximately 200 pure-bred rams and 1,500 breeding ewes. These

workers held several patriotic sheep meetings over the State, thereby creating a vastly increased interest in the production of sheep and wool, and in encouraging popular support of an adequate dog law to protect the sheep industry.

In addition to the work of aiding farmers of the State in constructing adequate dairy barns, milk houses, silos, and other necessary equipment, the dairy extension workers have given much of their time to the family cow movement and formation of pure-bred breeding associations. Over 150 family cows have been placed, while at the same time instruction has been given to the women of the State about the proper manufacture of butter, cottage cheese, and the handling of home dairy products. This latter work has been done through the Home Demonstration agents. Forty-one dairy schools were held in connection with the county agents, and school teachers; four bull associations have been organized, and 433 head of dairy animals have been purchased for these associations. The development of the cheese industry is very encouraging, with 25 factories now in operation, and one more under construction during the year.

The extension work in poultry and swine has been largely through the poultry and pig clubs. The poultry club work developed remarkably during the year, with a total membership of 4,869 boys and girls enrolled, which is twice the membership secured in 1917. The enrollment in the pig clubs for the past year is 4,507, which is an increase of 126 per cent over 1917. In this pig club work questions of proper butchering and proper curing of meat have been stressed, with lessons and demonstrations being given.

Swine Extension work has been done with the adult farmers, having largely for its purpose the increasing of the hog population of the State, this work being done largely in coöperation with the Marketing Division. Last year 24 cars of hogs were handled in this movement.

ENTOMOLOGY

To secure the greatest yields of food and feed crops, which was the aim during 1918, proper insect control must be exercised through the county agents, and in other ways. The Division of Entomology has carried on at least eight lines of extension work, the major of which included the protection of orchards, the stimulation of bee-keeping, the controlling of garden and truck crop insects and the elimination of the scourge of Hessian Fly in wheat.

The 130 members of the State Bee-keepers Association, which was organized by the Division, produced over 104 tons of honey last year. The activities of Mr. C. L. Sams, Bee-keeping Specialist, has brought to light the fact that the bee-keeping industry of the State is much more important than has been generally supposed, and the whole time of the worker has been used in giving instruction to farmers along this line.

A large number of local meetings were held in different counties of the State during 1918, where the message of better bees, better equipment and better methods has been advocated.

The appointment of Mr. W. A. Thomas as Extension Entomologist to teach the control of pests on general crops such as the Hessian Fly in wheat, the spraying of potatoes to control beetles, and the killing of weevils in stored grains, has enabled the Division, during the past year to meet the demands of farmers for information on these questions. The spraying of Irish potatoes, and the orchard control work also are two important lines of work which have received attention, and has resulted in a great amount of good.

HORTICULTURE

Extension work in Horticulture during 1918 has been grouped largely around the matter of conservation of sweet potatoes through the construction of proper storage houses, the dehydration of fruits and vegetables as a conservation measure, and the encouragement of war gardens. To a less extent, demonstration work with home orchards has been stressed.

The time of three men was used during the fall of 1917 to stimulate interest in the sweet potato storage houses, it having been found by experiments conducted on the Truck Branch Station that the loss of potatoes in these houses was less than 5 per cent. During the year 84 houses, with a total capacity of 144,500 bushels of sweet potatoes, were constructed, Nash County especially taking a leading part in this work, as 24 houses were built here according to specifications and plans furnished by the Division. These houses have approximately 1,800 bushels of potatoes stored in them this winter. Most of the houses built by the farmers had a capacity of about 500 bushels, while those put up by public institutions such as orphanages, or county homes, were usually of 2,500 bushel capacity. Along with this work, demonstrations were held showing how to handle potatoes during harvest, and how to select them for storage.

The war garden work was unusually successful. It was done in coöperation with the county agents, and through various civic bodies. About 200 meetings were held over the State in 29 counties.

A great amount of time was devoted to demonstrations in the drying and evaporating of fruits and vegetables. Many large commercial concerns and public institutions took an intensive interest in this work. They were furnished with blue prints and specifications to enable them to build the necessary plants for doing the work. A model community effort along this line can be seen in the dehydrating and canning plant of the Rosemary Manufacturing Company at Rosemary.

The campaign for the demonstration home orchards resulted in 106 being established. One or more orchards were located in each county in a public place, under the supervision of the county agent, and planted

with varieties of fruits recommended by the Division. This movement had for its purpose the increasing of the amount and quality of fruit grown for home use, and for the local market.

The Division suffered a great loss during the year by the resignation of Mr. W. N. Hutt, who resigned to go into commercial work in the Sandhill section of the State.

VETERINARY

The extension work of the Veterinary Division has followed the same lines along which work has been done in previous years, consisting largely in visiting representative farms throughout the State where a study was made of the abortion disease, and other animal troubles. Internal parasites, horse influenza, swine plague, livestock judging, and laboratory examinations for identifying diseases were the other main lines of work in which the Division was engaged. The Division was also called upon to test a number of dairy herds for tuberculosis, and to advise as to the elimination of the diseased animals.

Correspondence with farmers, demonstration agents, and veterinarians concerning various kinds of livestock diseases also was an important service rendered.

MARKETS AND RURAL ORGANIZATIONS

By encouraging the organization of Credit Unions, the coöperative buying and selling of products, the grading of cotton, and by the issuing of Market News Service, the Division of Markets has been of great value to the State during the past year.

Four credit unions, making a total of 18 now organized, were established. The first credit union to be organized among the negroes was also incorporated during the year. The addition of Mr. W. W. Garnett as Assistant Superintendent of Credit Unions, has greatly facilitated this work, as he has been able to hold one or more meetings with the members of each credit union. A monthly financial statement is now issued to all the members to show the condition of each credit union in a composite report. The last report shows that the total share capital of the unions has increased from nearly $5,000 to about $8,000, and that deposits have increased from about $8,000 to over $11,000. The loans have increased from about $15,000 to about $22,000, and the total resources have grown from $19,515.65 to $24,565.79. Those unions which are most successful in the coöperative buying of supplies are the ones which are now rendering the greatest service to the people. In the cotton grading work, a total of 28,862 samples were graded for farmers, 11,231 samples for buyers and sellers, and 7,830 were graded for the cotton mills of the State.

The Division also rendered active assistance in the sale of around 12,000 bales of cotton. Data which has been collected indicates that this one phase of the extension work has been worth at least $150,000 in

direct money returns to the producers. This work is now receiving increased recognition by buyers and is aiding in improving the quality of cotton being produced in the State.

In marketing the Division assisted in the coöperative selling of 10,478 barrels of early white potatoes; 1,800 sacks of late white potatoes; 10,380 barrels of sweet potatoes; 10,820 crates of strawberries, and 10 cars of corn. It also has assisted farmers in buying 17 cars of hogs, and in disposing of 10 carloads. Quite a bit of assistance has been given in marketing other produce through correspondence, and by the aid of the Monthly Market Bulletin.

The Market News Service was issued from four points to aid in disposal of different truck crops, and in some cases brought actual market news for the first time to the small growers of the vicinity. The weekly price report and the monthly review of producers' prices, which are distributed to merchants, farmers and the press, are having a very beneficial effect in acquainting farmers and others with condition of the market, so that the best prices may be received for their produce.

The addition of Mr. Chas. S. Jones as Specialist in Livestock Marketing is enabling the Division to be of greater service to farmers specializing in livestock production, and was responsible for the coöperative buying and selling of the several carloads of hogs during the year.

DRAINAGE

The principal activity in drainage has been in assisting farmers in locating tile drains and terracing systems. Additional work also has been done in the examination of swamps for drainage districts and drainage improvements.

Due to the resignation of Mr. F. R. Baker, who entered military service in 1917, Mr. F. O. Bartel was given the place of Junior Drainage Engineer, and has aided in the work of the Division.

The drainage systems were located on 42 farms in 23 counties, and comprised a total area of 2,400 acres. Approximately 76,200 feet of tile ditch was staked out on the ground. Twenty farms were visited for the purpose of giving assistance in the location and construction of terraces to prevent hillside erosion; the total length of these terraces laid out being approximately 181,000 feet. Due to the curtailment of the manufacture of tile during the past year, and the high prices and scarcity of labor, not as much tile drainage was done as heretofore.

FAIRS

While more fairs had been organized during the past year than ever before, 250 having applied for State aid and judges, the work was seriously hampered in the fall because of the outbreak of influenza, and the fair program of the year was abandoned. It was the idea to make these fairs more of an educational project than heretofore, and the prize money was awarded with this as a consideration.

A movement was inaugurated during the year to organize an association of fair secretaries, and this will be promoted during the coming fiscal year.

Aside from fair work, the office made one food survey for the Federal Bureau of Markets, and did much miscellaneous work in the administrative details of the Extension Service. A number of press articles and agricultural articles were prepared and issued.

PLANT PATHOLOGY

The inspection of cotton fields for the purpose of finding improved seed of a high grade, free from the Anthracnose disease, was one of the principal activities of this Division. This inspection covered an area of about 850 acres, from which about 14,500 bushels of high-grade seed is expected to be available for planting in North Carolina in 1919. Other activities had to do with the planting of wilt resistant cotton, the control of sweet potato diseases, and a study of wilt of tomatoes and watermelons. A number of plantings of the Dixie Wilt-resistant cotton was grown in wilt-infested fields in five counties. These plantings were made for the purpose of demonstrating that the only way to control the disease is by planting those cotton varieties which are resistant to it.

The work with sweet potato diseases had for its purpose the handling of the potatoes in the field and in the storage houses so as to avoid rots. All of the important sweet potato counties in the State, and all those growers who had houses on their farms, were visited in this work.

Seed of the "Norton" variety of tomatoes were distributed to several canning club girls through the Home Demonstration agents in eight counties to ascertain whether or not this variety would do well on land which is infected with the wilt. The same principle was followed in the watermelon wilt work by distributing wilt resistant watermelon seed of the "Conqueror" variety to county agents for planting on infected land in eight counties.

Considerable work was done with county agents when many individual farmers were visited and given information in regard to the control of field crop and truck diseases.

PUBLICATIONS

As has been stated, the press of the State has been one of the most loyal coöperators of the Extension Service during the year. The agricultural editor has sent an average of one story a day to a selected list of 200 papers, and in addition has supplied the leading Sunday dailies with a special comprehensive article for use on this day. Several other articles have been prepared for the use of the agricultural press, and have been very well received. It has been estimated by surveys made in the State Library that fully 85 per cent of the papers of the State use the material furnished them. At least five papers have issued large

Better Farming Specials, giving anywhere from 16 to 32 pages of their space for this purpose.

The Extension Service issued 24 circulars during the year, with a total of 259,000 being printed and distributed, 6 extension poster bulletins, with a total of 30,000 copies being printed and distributed. One report of 119 pages in length and comprising a total of 1,000 copies, was distributed. In addition to this, 722,417 circulars have either been multigraphed or printed by the office, and a total of 462,186 of these have been mailed from the office.

The Division also has handled the publications of the Experiment Station and State Department of Agriculture.

At the present time there are only about 64,000 names on the mailing list.

REPORTS OF HEADS OF DIVISION AND FINANCIAL STATEMENT

Attention is called especially to the reports of several divisions of the work, and the financial statements which follow.

REPORT ON FARM DEMONSTRATION WORK

To the Director:

Herewith is presented my annual report for the calendar year ended December 31, 1918.

The complete summary includes all the work done by both White and Negro Agents (with Whites and Negroes) except Club work, which is being reported by Mr. T. E. Browne, State Club Agent.

On account of war conditions the work has been very varied and very irregular during the year. Agents have been asked to do a large amount of unusual work in the way of making county surveys, handling the nitrate of soda for farmers, selling Liberty Bonds, Thrift Stamps, etc., and in a general way helping to keep the people properly informed as to the true status of war measures.

During the year the work has been conducted in 90 counties among white people, with one agent per county, and in 28 counties by Negro agents. The work done by Negroes, with the exception of that in Gates and Scotland counties, has been in the same counties as that done by white agents.

The largest number of agents on roll at one time was 104. During the year 17 agents have left the work by resignation and by draft, or volunteering for the service. Up to this time, January 15, 1919, nine of these vacancies have been filled. We expect to have the others filled within about 30 days, which will be in time to do good work this year, by beginning with the season's work.

We pause here to mention the sad death of District Agent R. W. Freeman, October 11th, by influenza, followed by pneumonia. Mr. Freeman was one of our most efficient workers, and we greatly miss his influence in the work. Mr. N. B. Stevens succeeds him.

Aside from the emergency work just mentioned we have conducted practically all the usual work in which we have heretofore been engaged. The work may be conveniently grouped as follows:

1. Crops.
2. Manures, fertilizers and lime.
3. Preparation and cultivation of soil.
4. Orchards.
5. Livestock, including horses, beef and dairy cattle, swine, sheep, goats and poultry.
6. Livestock diseases.
7. Silos and dipping vats, and other building demonstrations.
8. Organizations for business, social, and recreational purposes.
9. Cooperative buying and selling.
10. Farm and farmstead improvements.
11. Miscellaneous.

CONDENSED SUMMARY FARM DEMONSTRATION WORK, 1918

Crops		Acreage	Average Yield
Number corn demonstrators	2,014	11,962	49½ bu.
Number cotton demonstrators	474	6,615	1,386 lbs.
Number tobacco demonstrators	170	846	948 lbs.
Number small grains demonstrators	3,116	17,041	
Number hay, forage, etc.	2,471	11,125	3 tons.
Number summer legumes	2,723	16,442	2 tons.
Number potatoes	833	2,224	202 bu.
Totals	11,801	66,255	

Orchards

Number of Home Demonstration Orchards, 93.

Number of orchards inspected,	1,982;	Number of trees,	429,449
Number of orchards pruned,	1,990;	Number of trees,	190,728
Number of orchards sprayed,	832;	Number of trees,	81,514
Number of orchards wormed,	872;	Number of trees,	56,965
Number of orchards planted,	624;	Number of trees,	54,993
Totals	6,300		813,649

Number of Commercial Orchards Agents assisted in caring for, 88.
Number of trees—Sprayed, 11,488; pruned, 33,568; wormed, 3,484. Total, 48,539.

Horses

Number of purebred brought into the State—Stallions, 6; mares, 70. Total, 76.
Number of demonstrations in feeding, 78; animals, 221.
Number fed and cared for, 1,804.
Number formerly in the State—Stallions, 34; jacks, 32.
Number now in the State—Stallions, 64; jacks, 46.

Dairy Cattle

Number of purebred brought in—Bulls, 126; cows and heifers, 551.
Number of grade dairy cows, 660; cows tested, 288.
Number of Babcock testers, 12.
Number feeding better balanced rations, 1,903.
Number of stock so fed, 6,946.
Number of demonstrations in dairy work, 39; number cows, 208.
Number of creameries established during year, 4.
Number of purebred dairy bulls—Formerly, 108; now, 424.
Number of purebred dairy cows—Formerly, 653; now 3,163.
Number of cream routes established during year, 2.
Number of dairy breeders, 2.

Beef Cattle

Number of purebred brought in—Bulls, 191; cows and heifers, 369.
Number of grades brought in, 1,400.
Number of beef breeding herds started, 137.
Number of feeding cattle brought in, 648.
Number of beef feeding demonstrations conducted, 20; cattle, 624.
Number of beef cattle cared for by agent's directions, 772.
Number of purebred bulls—Formerly, 99; now, 378.
Number of purebred beef cows—Formerly, 169; now, 1,356.
Number of carloads shipped during year, 8.

Dipping Vats

Number of vats built during year, 33.
Number agents helped to build, 13.
Number agents helped fill, 24.
Number agents helped test solution for, 4.
Number built by all forces, 203.
Total number in State now, 390.
Number of cattle dipped during the year, 15,210.

Hogs

Number of purebred brought in—Boars, 791; sows, 2,465.
Number of herds started, 2,301.
Number of hog feeding demonstrations supervised, 506.
Number of hogs in these demonstrations, 3,915.
Number of records kept of them, 232.
Number of hog pastures started, 2,356.
Number of farmers started with grazing crops, 4,763.
Number of hogs cared for or fed by agents' advice, 42,580.
Number of purebred boars—Formerly, 1,671; now 2,437.
Increase in number of hogs in demonstration territory, 78,900.
Number of carloads shipped this year, 70.

Sheep and Goats

Number of purebreds brought in—Rams, 102; ewes, 174.
Number of grades brought in, 1,974.
Number of flocks started, 173.
Number of sheep feeding demonstrations supervised, 3; sheep, 50.
Number of farmers induced to grow grazing crops, 191.
Number fed or cared for by agents' advice, 6,488.
Number of purebreds—Formerly, 73; now, 225.
Increase in sheep in demonstration territory since the work started, 877.

Poultry

Number of poultry demonstrations, 535.
Number of each kind—Chickens, 73,592; ducks, 150; turkeys, 2,052; guineas, 147; geese, 84.

Number of farms improving methods, 4,508; birds, 146,069.
Number of agents advising on poultry diseases, 43.
Number of farmers producing nonfertile eggs, 360.
Number of eggs so produced, 2,760 dozen; price per dozen, 45 cents.
Number of communities having same breed of fowls, 57.
Number of cream routes collecting eggs, 23.

Livestock Diseases and Pests

Number stock agents, extension workers, and others have induced farmers to have treated for diseases or pests in demonstration territory:
Number of cattle—For blackleg, 2,512; anthrax, 20; tuberculosis, 1,416; digestive and other troubles, 15,551.
Number of hogs—For cholera (single), 24,390; simultaneous, 24,272; worms, 13,204; lice, 22,924; mange, 3,621.
Number of sheep—For worms, 1,071; grubs, 52; scabs, 455; ticks, 499; digestive and other troubles, 338.
Number of horses—For distemper, 167; digestive trouble, 267; accidents, 110; charbon, 10; other troubles, 187.
Number of above treated by agents:
Cattle—Blackleg, 1,889; anthrax or charbon, 45; tuberculosis, 151.
Hogs—Cholera, 26,329.
Horses—Charbon, 63.
Number of agents having implements for treatment, 36.

Fertilizers

Number of farmers advised concerning, 34,132.
Number of fertilizer demonstrations conducted, 1,745.
Number of tons used on them, 1,402.
Number of communities using cooperatively, 157.
Amount bought cooperatively, 20,094 tons.
Amount saved, $69,764.65.
Number of farmers home-mixing, 7,538; saved per ton, $6.14.
Number of farmers top-dressing at agents' suggestion, 8,436.

Manures

Number of farmers induced to take better care, 7,345.
Number of farmers providing sheds by agents' advice, 533.
Number of farmers composting by agents' advice, 3,708.
Number of manure spreaders bought, 1,241.
Number agents helped to place, 99.
Number of farmers using phosphate as reinforcement, 11,778.
Number of tons (estimated) being saved in the State, 1,066,647.

Silos

Number built in State this year, 52.
Number built by advice of agents, 48.
Number at beginning of work, 209; now, 584.
Number tile, 22; cement, 97; stone, 70; others, 395.

Lime

Number of farmers using by agents' advice, 4,452.
Number of tons used—Burnt lime, 9,276; limestone or its equivalent, 8,135.
Number of local sources developed, 19.
Number of kilns built as result of demonstration work, 8.

County Organizations

Number of central county organizations, 31.
Number of community clubs organized, 316; membership, 7,531.
Number of community clubs in counties, 416; membership, 11,077.
Number of community clubs ceasing to exist, 93.
Number of community clubs dependent on county agents, 25.
Number of clubs having community plans, 13.
Number of community clubs having definite plans, 15.
Number of counties thoroughly organized, 10.

Cooperative Buying and Selling

Value of stuff bought cooperatively, $453,965.20.
Saved by buying cooperatively, $46,998.05.
Number of agents keeping bulletin boards, 41.
Number of agents using Market News Service, 50.

Farm and Farmstead Improvements

Work done with advice and help of agents and other Extension workers:
Number of buildings erected, 323.
Number of buildings improved, 664.
Number of building plans furnished, 202.
Number of buildings painted or whitewashed, 659.
Number of home water systems installed, 216.
Number of home water systems—Formerly, 494; now, 22,351.
Number of home lighting systems installed, 598.
Number of home lighting systems before work started, 846; now, 1,444.
Number of grounds improved, 1,799.
Number of homes sanitary conditions improved, 4,626.
Number of homes screened, 4,319.
Number of privies erected, 1,855.
Number of telephone systems installed, 67.
Number of farmers induced to plan and use rotations, 2,133.
Total acreage of such rotations, 75,891.
Number of new pastures established, 1,390; acres, 6,218.
Number of old pastures renovated, 668; acres, 10,075.
Number of drainage systems established, 97.
Number of farmers induced to drain all or part of farm, 721.
Number of acres so drained, 11,328; by tile, 1,908; by ditches, 9,420.
Number of farmers induced to remove stumps, 649.
Number of farmers induced to terrace land, 1,738; acreage, 24,135.

Number of home gardens planted, 15,405.
Number of farmers to save surplus products, 13,817.
Number of road improvement demonstrations assisted in, 2,208.
Number of miles resulting therefrom, 1,014.
Number of farmers planting cover crops, to be turned under, 20,261.

Small grains, acreage,	76,250
Winter legumes, acreage,	23,121
Summer legumes, acreage,	11,535
Grasses, acreage,	180
Total acreage,	111,086

Number (total) of implements and tools bought, 11,468.

Miscellaneous Demonstration Work

Number of visits by agents to demonstrators	19,997
Number of visits by agents to cooperators	11,217
Number of visits by agents to other farmers	34,443
Number of visits by agents to business men	9,174
Number of visits by agents to Boys' and girls' Clubs	13,011
Total	87,842
Number of miles traveled (railroad)	208,324
Number of miles traveled (team)	100,754
Number of miles traveled (otherwise)	319,885
Total	628,963

Number of calls on agents at office or home (personal), 62,551.
Number of calls on agents at office or home (telephone), 15,608.
Number of farmers' meetings held by agents or Extension Division, 4,687.

Number of farmers' meetings addressed by agents, 8,203; attendance	391,309
Number of field meetings held by agents, 1,446; attendance	22,622
Total	413,931

Per cent of time spent in office, 27.
Per cent of time spent in office, 27.
Number of official letters written, 93,373.
Number of articles written for publication, 2,491.
Number of circular letters sent out, 92,765.
Number of U. S. Department of Agriculture bulletins mailed, 96,844.
Number of State College and State Department of Agriculture bulletins mailed, 83,903.
Number of visits to schools, 2,972.
Number of assistances in school plans, 213.
Number of extension short courses assisted in, 365.
Total attendance at such schools, 9,273.
Number of days spent in such schools, 135.

Number of farmers induced to attend farmers' meetings, 303.
Number of boys induced to attend schools or colleges, 340.
Number of visits by specialists to agents, 1,276.
Number of county fairs held, 19.
Number of demonstrators, cooperators, and club members having exhibits, 632. How many won prizes? 387.
Number of demonstrators in truck farming, 289.
Number successful financially, 18.
Number of farmers keeping cost records—complete, 386; partially, 2,073.
Number of farmers practicing fall plowing as result of agents' work, 13,816.
Number of farmers selecting seed, 17,112.
Number of farmers growing improved seed for sale, 1,925.
Number of wood lots improved by suggestions, 145.
Number of farmers induced to grow sorghum or sugar cane for syrup, 8,719.

Effect of Demonstration Work on the Community and Human Interest Features

Demonstrators and Cooperators—
- Raising practically all their home supplies, 79 per cent.
- Have opened new bank accounts since beginning demonstration work, 42 per cent.
- Have increased bank deposits since beginning demonstration work, 53 per cent.
- Own their farms, 70 per cent.
- Have mortgages on their farms, 26 per cent.
- Have paid off mortgages since demonstration work started, 29 per cent.
- Are trading on a cash basis, 50 per cent.

Demonstrators and Farmers—
- Decreasing their indebtedness along various lines, 76 per cent.
- Showing increased interest in agricultural meetings, 72 per cent.
- Showing a desire to study their farm business and progress, 75 per cent.
- Demonstrators and cooperators who have installed labor-saving devices in their homes, 65 per cent.

COMMENTS AND EXPLANATIONS

Corn Growing

The important principles involved in the matter of large and profitable yields of corn are about as follows:

1. Deep breaking and thorough pulverization of soil to prepare a suitable seed bed.
2. The growing and turning under of legumes, and other crops containing organic matter.
3. The proper use of moderate amounts of such kinds of fertilizers as are adapted to the soil conditions where the corn is grown.
4. The planting of well-improved varieties of seed, especially of such as produce two ears per stalk.
5. Frequent and shallow cultivation.

That these principles are valuable is shown by the fact that for 10 years farmers who have applied the principles have produced more than double the amount of corn per acre as is produced by the State as a whole.

The number of corn demonstrations for 1918 was not as large as for 1917, but the average yield per acre for 1918 was 49½ bushels, or ¾ of a bushel more than for 1917.

The number of demonstrations for 1918 was 2,014, amounting to 11,962 acres, or averaging about 5½ acres per each demonstration. Practically all of these demonstrators used well selected, improved seed, and the majority of them did deep breaking of their land in the fall. Practically all of them followed the five principles named above.

Over 500 acres were treated for various diseases and insect pests to which corn is subject.

All together it is estimated by agents that 58,000 farmers were induced to use better methods of corn growing.

There is some rivalry between county agents as to yield in corn growing, as well as rivalry in other work. There is always an interest in getting the reports of the work in the State so that comparisons may be made.

The counties making the highest yields on the demonstration areas are given below. Many of the yields reported, however, are not actually measured, but carefully estimated. These estimates are well made, as shown by the fact that the estimated yields of corn in the State by county agents, as compared with that of the Bureau of the Census, is only 1-10 of a bushel less.

The yields and acres reported by county agents, omitting fractions, are as follows:

DEMONSTRATION CORN GROWING

NAME OF AGENT	COUNTY	ACRES	YIELD
Frank Fleming	Henderson	50	75
E. D. Weaver	Buncombe	30	70
H. L. Boyd	Sampson	25	70
E. C. Lackey (Negro)	Forsyth	13	68
W. M. Mackie	Yadkin	250	68
R. W. Gray	Graham	10	63
W. M. Laughinghouse	Tyrrell	300	63
J. R. Sams	Polk	12	63
G. D. Burroughs	Nash	100	63
F. E. Patton	Yancey	120	63
R. K. Craven	Bladen	120	61
W. T. Kyzer	Lenoir	4	60
J. L. Holliday	Martin	600	60
A. G. Hendren	Wilkes	230	58
T. J. W. Broom	Union	46	56
B. T. Ferguson	Pitt	61	55
A. M. Johnson	Johnston	42	55
C. C. Proffitt	Rutherford	60	54
F. S. Walker	Rockingham	111	51
V. G. Martin	Wayne	141	51
W. L. Smarr	Lincoln	174	51
R. D. Goodman	Cabarrus	300	50
E. L. Perkins	Burke	150	50
W. R. Reece	Davie	40	50

Wheat Growing

At, and previous to this time, our State had on a campaign for increased wheat production, not only for a larger acreage, but an increased yield per acre. Our records show that both were successful.

Notwithstanding the serious damage done by Hessian fly our average yield on demonstration areas was 19 bushels per acre, which is a good average for the State as a whole. Much good wheat has been saved for seeding purposes.

Our records show that fully 20,000 farmers were induced for the first time, to plant a small acreage of wheat, the most of them were in the eastern half of the coastal plains section of the State, where very little wheat has been grown before. A very encouraging fact from that section is that the average yields in the coastal plain was 23 bushels per acre, as against 19 bushels per acre for the balance of the State on demonstration areas. This is largely due

Fig. 6. First Coöperative Shipment of Hogs from Hyde County

to the extra care given to the matter by farmers, the small areas planted, the good advice of the county agent in growing wheat, especially the preparation and fertilization of the soil, good seed for planting, and the proper date for planting. The following from Bladen County is an illustration of the time for planting:

Mr. C. H. Brisson planted four acres November 1st, as he was advised by County Agent Craven. From that he harvested 90 bushels of wheat. On December 30th he planted three more acres, against which he was advised by the agent, on the same type of soil with all conditions the same except the date of planting. From those three acres he harvested three bushels of wheat, the same amount planted.

Cotton and Tobacco

While advising farmers to do safe farming by growing various kinds of food and feed crops, the production of grain crops, livestock, etc., sufficient attention has been given to the growing of our two most staple farm crops, cotton and tobacco. The yields of both of these have been good. The price of cotton has been high, but has varied considerably up to this time. That of tobacco has maintained a high and very satisfactory price. Thus, as a whole, our farmers are just beginning a new year under favorable financial conditions.

Oats and Rye

On account of the suitability of our conditions we are finding these crops to be very valuable for winter cover crops. Oats may be planted among cotton at the last cultivation to save labor and insure the planting of the crop which would probably not be planted a little later when the busy cotton-picking season came on. Oats have the advantage in that they may be planted in the hot summer and stand the heat and also get such a sufficient hold on the soil to prevent much winter killing. They may be either turned under or harvested for feeding purposes.

Where for any reason oats, clover, etc., cannot be planted at the proper time, we are finding rye, and especially Abruzzi rye, a good substitute becaues it can be planted as late as the first of December and still make a satisfactory growth to the time it is to be turned under in the spring. It grows much more upright and makes a larger growth than ordinary rye.

Hay, Forage, and Cover Crops

This work includes the growing of red, white, crimson, and Japan clovers, sorghum, alfalfa, vetch, wheat, oats, rye, rape, sweet sorghum.

Two of these crops deserve special notice. They are soy and velvet beans for the production of livestock, and especially swine. We are finding soybeans to be one of the most valuable crops now grown, and is well adapted to most of our conditions. The acreage has been increased during the season, probably as much as 30 to 40 per cent.

The acreage to velvet beans has probably been increased as much. Farmers are very much gratified with this crop as a soil renovator and for the production of pasture, beginning by December 1st and continuing through the winter months. Also, the roots, vines, leaves, etc., serve as a good winter cover crop in holding the soil.

Through the Piedmont and Mountain counties the agents are giving attention to alfalfa growing among farmers who are reliable and will follow directions. The records show that 37 agents grew 440 demonstration acres of alfalfa, the yield averaging three tons per acre. Altogether there were grown of the crop just given, 11,125 acres as demonstration work. This yielded an average of three tons per acre. The work with summer legumes has been satisfactory, but not exceptionally so.

Silos and Dipping Vats

Splendid work has been done in the matter of building dipping vats for the eradication of the diseases and insect pests of livestock. Over 15,000 head have been dipped this year.

Building of silos, comparatively speaking, seems slow, but during the year, through the influence of county agents the people have become more interested in the matter. The number of silos since the work started has increased from 209 to 779.

Orchard Work

The handling of all kinds of work is, of course, continued from year to year. While with the past year, only 93 home demonstration orchards were planted, yet the 723 planted during previous years had to be cared for. We find the total number of orchards now to be handled is 2,579, with a total of 163,185 trees. The spraying, pruning, etc., is largely done through the winter months, while other things are not so pressing.

Livestock

The number of purebred livestock brought in during the year for breeding purposes, exclusive of poultry, is 4,745, which we believe is a good showing. Proper attention has been given to these animals in the way of suitable food, housing, destruction of parasites and the control of diseases.

Manures, Fertilizers, Lime

Efforts in this connection have been very satisfactory. Farmers have been taught to properly care for farm manures, how to supplement them as balanced food for plants and how to apply and use successfully.

The main work in connection with fertilizers has been to adapt the formula to the crop and to the conditions under which it is to be grown. Demonstrations show that this work has been good. Also, there has been much saving to farmers by buying cooperatively, and especially in the purchase for home mixing.

Probably the greatest increased interest under this head has been the demand for lime. In this connection we wish to suggest that some better arrangements be made to furnish it to farmers so that they can get the amounts wanted and get it at the time it is needed. Our arrangement for the past year has not been satisfactory in these respects.

Farm and Farmstead Improvements

Under this head is noted probably the greatest indication of progress and prosperity among the rural people. Farmers are whitewashing, painting, introducing water and lighting systems, telephones, screens, sanitation, and other conveniences, as they have never done before. They are establishing good pastures, removing stumps, draining and terracing the land, starting rotation of crop systems, planting cover crops, etc.

In the way of feeding the family on the farm the planting of 15,400 new gardens shows that the work is meeting with success.

Organizations

During the year 31 county organizations and 316 community organizations have been perfected; of the latter, 192 were community fairs. Twenty of these were effected by negro agents.

The community fair work was well organized and in active existence when the epidemic of influenza stopped the most of them. The people, however, have caught the cooperative and better spirit, so that they expect to renew their activities next season. The other organization work needs to be given more attention during the ensuing year than has been given it in past years. It is found that in order to multiply his influence the county agent will have to depend upon organizations rather than work with individuals.

Miscellaneous

The facts and figures shown in the summary indicate the activity of the agents and the varied work accomplished. We wish to call especial attention to the number of visits, 87,842, to farmers; the number of meetings addressed, 9,649; the number of people in attendance at meetings, 393,931; add to these 16,551 personal and 16,608 telephone calls, and we have a total of 427,096 people reached directly during the year. If we count each bulletin, circular, and letter sent out as influencing at least one person, that brings the total of services rendered up to 793,975. If each article published reached an average of only 100 people, that will increase the total services rendered to 1,043,075.

If each demonstration were counted as reaching only one person that would place the total number of services rendered to 1,156,583; but every person reached influences others, and those still others, and so on indefinitely and continually from year to year, so it is a matter of utter impossibility to calculate the extent of the influence of the work.

COUNTY PROGRESS

As illustrative of the progress due to the influence of demonstration work in the county, the following facts and figures are about those of the average county where the work is conducted:

Moore County

(Comparisons of conditions in 1909 with 1918.)

	1909	1918
Personal property and real estate	$3,590,633	$ 7,022,188
Money and solvent credits	386,000	560,000
Taxes collected	8,193	20,511
Value of school property	22,720	136,364
Value of school libraries	2,330	10,431
Districts levying supplemental taxes for schools	10	38
Length of school term (days)	80	124
White teachers' salaries (per month)	$29.36	$45.38
Expended for schools	2,600	75,000

Number and value of livestock:	1909			1918		
Horses and mules	2,788	@	$216,632	3,649	@	$359,188
Cattle	5,538	@	61,131	5,101	@	122,998
Swine	12,436	@	22,603	6,553	@	53,666
Farm implements			19,000			71,000
Furniture			110,000			367,000

While the number of cattle and hogs has decreased during the nine years under consideration, yet the value of each has greatly increased. That is due to some extent to war conditions within the past two or three years, but not altogether. It is partly due to the fact that the scrub has been replaced by the purebred.

The Sandhill nondescript cattle that produced neither beef nor milk and butter profitably have been replaced by profitable beef and dairy types that are much more valuable. The "piney woods rooter" no longer roams the woods as a free commoner, for his place has been filled with the aristocratic Berkshire, Duroc-Jersey, and other good breeds. Moore County no longer gets its breeding stock from outside its borders, but is shipping out breeding stock in large numbers.

Eight Years Progress in Anson County

	1910	1918
Road funds	$10,535.77	$33,816.98
School funds	21,530.30	60,611.08
School property	34,400.00	69,000.00

Number of pure-blooded animals brought in for breeding purposes during eight years—Stallions, 4; mares, 45; bulls, 57; cows, 289; hogs, 346; sheep, 14.

Estimated increase in farm machinery purchased, 40 per cent.
Bank deposits, 1915, $719,944.67; 1918, $1,932,713.00.
Per cent of increase in bank deposits by farmers, 105.
Figures for bank deposits are available for only three years.

SUMMARY OF NEGRO DEMONSTRATION WORK BY NEGRO AGENTS, 1918

Crops		Acreage	Average Yield
Number corn demonstrators	400	2,637	42½ bu.
Number cotton demonstrators	160	1,449	1,202 lbs.
Number tobacco demonstrators	56	298	1,320 lbs.
Number small grain demonstrators	841	2,291	
Number hay, forage, etc.	241	1,059	3 tons.
Number summer legumes	375	1,459	2 tons.
Number potato legumes	29	43	165 bu.
Totals	2,102	9,236	

Orchards

Number of orchards inspected	139;	Number of trees,	5,025
Number of orchards pruned	215;	Number of trees,	6,070
Number of orchards sprayed	77;	Number of trees,	1,860
Number of orchards wormed	121;	Number of trees,	1,742
Number of orchards planted	41;	Number of trees,	2,635
Totals	593		17,332

Number of Commercial Orchards cared for, 2.
Number of Commercial trees—Sprayed, 1,190; pruned, 3,155; wormed, 277. Total, 4,622.

Horses

Number brought into State—Mares, 32.
Number of demonstrations in feeding, 23; animals, 39.
Number fed and cared for, 50.

Dairy Cattle

Number of purebred brought in—Bulls, 5; cows and heifers, 34.
Number of grade dairy cows, 77.
Number of cows tested, 25; Babcock testers, 1.
Number feeding better balanced rations, 135.
Number of stock so fed, 372.
Number of demonstrations in dairy work, 18; cows, 18.
Number of purebred dairy bulls—Formerly, 0; now, 14.
Number of purebred dairy cows—Formerly, 0; now, 84.

Dipping Vats

Number of vats built during year, 5.
Number agents helped build, 2.
Number agents helped fill, 6.
Number agents tested solution for, 1.
Number (total) built by all forces, 106.
Number (total) in State now, 118.
Number of cattle dipped during year, 2,150.

Hogs

Number of purebred brought in—Boars, 29; sows, 116.
Number of herds started, 203.
Number of hog feeding demonstrations supervised, 24.
Number of hogs in these demonstrations, 337.
Number of records kept of them, 6.
Number of hog pastures started, 160.
Number of farmers started with grazing crops, 340.
Number of hogs fed or cared for by agents' advice, 3,450.
Number of purebred boars—Formerly, 9; now, 18.
Number of hogs in State—Formerly, 25,356; now, 29,056.
Number of carloads shipped this year, 12.

Poultry

Number of poultry demonstrations, 376.
Number of each kind—Chickens, 14,855; ducks, 150; turkeys, 1,041; guineas, 47; geese, 39.
Number of farms improving methods, 572; birds, 24,468.
Number of agents advising on poultry diseases, 7.
Number of farmers producing nonfertile eggs, 60.
Number of eggs so produced, 2,930 dozen; average price per dozen, 53c.
Number of communities raising same breed fowls, 10.

Livestock Diseases and Pests

Number of head treated—
Cattle—For tuberculosis, 2; lice, 15; digestive and other troubles, 1.
Hogs—For cholera (single), 27; simultaneous, 413; worms, 217; lice, 186; other, 35.
Horses—For digestive troubles, 1; accidents, 4.
Number of above treated by agents—Hog cholera, 65.
Number of agents having instruments for treatment, 1.

Fertilizers

Number of farmers advised concerning, 2,340.
Number of fertilizer demonstrations conducted, 303.
Number of tons used on them, 268.
Number of communities buying cooperatively, 36.
Amount bought cooperatively, 811 tons.
Number of farmers home-mixing, 155; saved per ton, $4.25.
Number of farmers top-dressing at agents' suggestion, 533.

Manures

Number of farmers induced to take better care of, 1,514.
Number of farmers providing sheds by agents' advice, 169.
Number of farmers composting by agents' advice, 582.
Number of manure spreaders bought, 68.
Number of manure spreaders agents helped to place, 3.
Number of farmers using phosphate as reinforcement, 392.
Number of tons (estimated) being saved in State, 44,897.

Lime

Number of farmers using by agents' advice, 263.
Number of tons used, 498; (burnt lime, 258; limestone, 240).

Organizations

Number of central county organizations, 5.
Number of community clubs organized, 65.
Number of community clubs in State, 111.
Number of community clubs dependent on county agents, 7.
Number of clubs having community plans, 3.

Cooperative Buying and Selling

Value of stuff bought cooperatively, $1,951.90.
Amount saved by buying cooperatively, $657.45.
Number of agents keeping bulletin boards, 6.
Number using Market News Service, 5.

Farm and Farmstead Improvements

Number of buildings erected, 57.
Number of farm buildings improved, 95.

Number of building plans furnished, 10.
Number of buildings painted or whitewashed, 54.
Number of home water systems installed, 41.
Number of home water systems—Formerly, 0; now, 50.
Number of lighting systems installed, 42; now, 745.
Number of grounds improved, 994.
Number of sanitary conditions improved, 484.
Number of homes screened, 240.
Number of sanitary privies erected, 10.
Number of farmers induced to plan and use rotations, 238.
Total acreage of such rotations, 2,958.
Number of new pastures established, 62; acres, 334.
Number of old pastures renovated, 7; acres, 84.
Number of drainage systems installed, 3.
Number of farmers induced to drain all or part of farms, 113.
Number of acres so drained, 1,160; by tile, 10; by ditches, 1,150.
Number of farmers induced to remove stumps, 98.
Number of farmers induced to terrace land, 26; acreage, 202.
Number of home gardens planted, 1,846.
Number of farmers induced to save surplus products, 2,029.
Number of road improvement demonstrations assisted in, 9.
Number of miles resulting therefrom, 65.
Number of farmers planting cover crops, 989.
Number of acres: rye, 3,374; clover, 975; oats, 367; velvet beans and peas, 720. Total, 5,436.
Number of implements and tools bought, 1,011.

Miscellaneous Demonstration Work

Number of visits by agents to demonstrators	3,898
Number of visits by agents to cooperators	2,037
Number of visits by agents to other farmers	2,420
Number of visits by agents to business men	485
Number of visits by agents to Boys' and Girls' Clubs	1,949
Total	10,789
Number of miles traveled (by railroad)	10,421
Number of miles traveled (by team)	28,208
Number of miles traveled (otherwise)	3,170
Total	41,799

Number of calls on agent at office or home (personal), 3,787.
Number of calls on agent at home or office (telephone), 49.
Number of farmers' meetings held by agent or Extension Division, 600.

Number of farmers' meetings addressed by agents, 744; attendance	53,938
Number of field meetings held by agents, 72; attendance	783
Total	54,721

Per cent of time spent in office, 24.
Per cent of time spent in field, 76.
Number of official letters written, 4,416.
Number of articles written for publication, 33.
Number of circular letters sent out, 536.
Number of U. S. D. A. bulletins mailed, 8,117.
Number of State College and State Department agricultural bulletins mailed, 6,133.
Number of visits to schools, 527.
Number of times assisted in school plans, 26.
Number of extension or short courses assisted in, 1.
Total attendance at such schools, 582.
Number of days spent in such schools, 2.
Number of boys induced to attend schools or colleges, 62.
Number of visits by specialists to agents, 34.
Number of county fairs held, 2.
Number of demonstrators, cooperators and club members with exhibits, 93.
How many won prizes? 63.
Number of demonstrators in truck farming, 25.
Number successful financially, 1.
Number of farmers keeping cost records—Complete, 8; partial, 492.
Number of farmers practicing fall plowing as result of county agents' work, 888.
Number of farmers selecting seed, 1,443.
Number of farmers growing improved seed for sale, 29.
Number of wood lots improved by suggestion of agent, 18.
Number of farmers induced to grow sorghum or sugar cane for syrup, 112.

Effect of Demonstration Work on the Community and Human Interest Features

Demonstrators and Cooperators—
Raising practically all their home supplies, 1,525.
Have opened new bank accounts since beginning demonstration work, 339.
Have increased their bank accounts since demonstration work started, 296.
Own their own farms, 1,251.
Have mortgages on their farms, 105.
Have paid off mortgages since demonstration work started, 142.
Are trading on a cash basis since demonstration work started, 137.
Demonstrators and Farmers—
Decreasing their indebtedness along various lines, 77 per cent.
Showing increased interest in agricultural meetings, 84 per cent.
Showing a desire to study farm business and progress, 88 per cent.
Per cent of demonstrators and cooperators who have installed labor-saving devices in their homes, 17.

Special Report by White Agents on Work With Negro Farmers

Number of negro demonstrators (all crops), 152.
Number of negro demonstrators reporting, 74.
Total acreage of all crops grown under improved methods on negro demonstration farms, 949.

Number of negro cooperators (all crops), 166.
Total acreage of all crops of negro cooperators, 1,642.
Number of negro farmers who planted pure or selected seed, 107.
Number of negro farmers influenced to select seed for next crop, 299.
Estimated quantity of all seed selected, 749 bushels.
Number of negro farmers who fall-plowed demonstration acres, 52.
Number of negro farmers following demonstration methods, 1,297.
Principal crops grown under demonstration methods—Wheat, corn, cotton.
Number of pureblood animals bought by negro farmers through agents' advice: Horses and mules, 6; dairy cattle, 12; beef cattle, 14; hogs, 173; sheep and goats, 28; poultry, 527.
Number of negro farmers who have produced practically all their home food and feed due to agents' advice, 237.
Number of negro agricultural clubs or community organizations formed this year for general improvement of rural conditions, 7.
Number of members, 114.
Farm and rural improvements made due to agents' influence: New houses built, 43; new barns, 46; new schools, 3; churches, 5; buildings improved or repaired, 142.
Farm Markers' Clubs organized this year, 3; members, 51.

Summary of Total work Done With Negroes by White and Negro Agents

Number of negro demonstrators (all crops), 2,254.
Total acreage (all crops) grown under improved methods on negro demonstration farms, 7,548.
Number of farmers who planted pure or selected seed, 1,550.
Estimated quantity all seed selected, 749 bushels.
Number of farmers who fall-plowed demonstration acres, 940.
Number of pureblood animals bought by negro farmers through agents' advice: Horses and mules, 38; dairy cattle, 110; beef cattle, 14; hogs, 318; sheep and goats, 28; poultry, 527.
Number of negro farmers who are raising practically all their home supplies, due to agents' advice, 1,762.
Number of negro agricultural clubs and community organizations this year, 72.
Farm and rural improvements made, due to agents' influence: New buildings erected, 154; farm buildings improved or repaired, 237.

NOTES ON NEGRO WORK

The 14 Local Negro Agents in Demonstration Work have shown up fairly well in results, according to the following notes:

An average yield of corn of 42 bushels per acre, on 2,800 acres, where the average yield of negro farmers outside of demonstration work, was probably not more than 12 to 15 bushels per acre. This matter needs to be given the first attention among the growing of crops, in order that negro farmers who are so dependent upon buying supplies may be enabled to grow sufficient grain for the work stock, and that in a large measure supply bread for the family.

Two of the agents, notably, G. W. Herring and F. D. Wharton, have

interested the farmers in getting better milch cows. The records show that they had shipped into their counties 34 purebred Jersey cows and 5 bulls. In the way of grades they have bought 77. In the case of G. W. Herring, the white bankers in his county furnished money to such of these farmers as were not able to furnish cash for the purchase of cows.

Negroes, as a rule, consume more pork than they grow. The records show that the agents have had purchased 29 purebred boars and 116 sows for breeding purposes. With the matter of pork and bread provided for, the negro is in a fair way for self-support. With these purebreds there have been started 100 herds or more. Much attention has been given to the matter of grazing crops for hogs. In this, 340 farmers have been induced to grow grazing crops. In the way of general pastures, 160 have been started this year.

In the way of organizations the negro agents are becoming interested in cooperative efforts. The 65 organizations reported show well for this feature of the work.

In seed selection, over 1,400 farmers have been induced to engage in this work. This is mainly the selection of seed corn.

In the way of home conveniences, sanitary conditions, etc., may be mentioned that 41 water systems have been installed, 79 lighting systems have been installed, 240 houses have been screened, and 484 families have improved their sanitary conditions.

The negro agents have given due attention to the matter of planting home orchards and caring for them. About 3,000 trees have been given attention in the way of demonstrations.

Still another noticeable feature is that of home gardening. As a rule, very few negroes have gardens growing vegetables, except usually some collards, some cabbage, and roasting ears in summer. The agents are making an effort to get them to grow a large variety of vegetables, and to have more of them grown in the winter.

In the way of finances, the records show that 339 negro farmers have opened new bank accounts, in negro districts, during the year. This is an average of 12 per county. In several cases negroes have been organized to borrow money from banks, each farmer becoming responsible for the others; thus, they are not only gaining the confidence of white people with whom they live, but are getting real help from them as stated.

Respectfully submitted,

C. R. HUDSON,
State Agent.

REPORT ON HOME DEMONSTRATION WORK AND GIRLS' CLUBS

To the Director:

In the past year or fifteen months Home Demonstration Work has twice had the opportunity of proving its worth to the State. When news came from our allies that there must be an enormous increase of our food shipments to them if the war was to be won, plans were made by the United States Department of Agriculture and the United States Food Administration to put on a campaign for food conservation and food production in every State in the Union. Naturally it was to the organized bodies in a State that they looked for organized work in the campaign, and we have felt proud of the part that the women and girls in Home Demonstration Work have played as producers and conservers of food.

The second opportunity was presented when the terrible epidemic of influenza struck the State, creating an urgent and widespread need for feeding the sick, and the Home Demonstration agents responded in such a splendid way.

The intensive food conservation program began with the women in the fall and winter of 1917-18, and concentrated on the saving of wheat flour, red meats, fats, and sugar. It is no easy task to interfere with the food habits of a people and keep a satisfied family at meal times, and it was with care and preparation that the Home Demonstration agents in seventy-two counties went about this task of putting on in their clubs a commonsense and workable food program. These women report 8,807 food demonstrations given and 8,250 meetings held, with an attendance of 826,283 people.

There were enrolled in the organized clubs 16,663 women and girls, who did intensive conservation work; and as additional club workers there were 4,744 colored women organized in twenty counties, 161,523 women, who did not care to join the clubs, attended lectures and demonstrations and agreed to work under Home Demonstration methods to produce and conserve.

North Carolina is a corn State and it was to cornmeal that we turned for our principal substitute for wheat flower. Meal, potatoes, rice, buckwheat, and oatmeal were the basis of all our mixed breads.

One county agent writes in her weekly report:

This week I carried my oil stove to all the club meetings and cooked plain cornmeal muffins and oatmeal cookies, and I showed how cold rice, grits, or potatoes could be added to muffins to make them lighter and more palatable. We used one-half molasses and one-half sugar in the cookies and the women were much interested in the demonstrations. At Cedar Hill we had fifty women present, with eight babies in arms. I shall continue the muffin demonstrations until I cover the county.

Another county agent writes:

We decided to have a food show in one of the grocery store windows and there we placed the cooked substitutes for meat, sugar and wheat that we are using in our homes. This attracted a great deal of attention and we were able to distribute quite a number of recipes. The town paper agreed to print the recipes for us.

Early in the fall a family food ration was worked out in the Home Demonstration office and each county agent agreed to push the observance of this ration amongst the club women.

Ration Per Person Per Week

Wheat flour	2 lbs.
Red meat	1 lb.
Sugar	1 lb.
Fat (butter, lard, oil, bacon fat)	17 oz.

This ration was further moderated in the spring to one and one-half pounds of flour and three-fourths pound of sugar, and later the call for "cornbread patriots" was made, when each housewife was asked to purchase no more wheat flour and stick to cornmeal entirely.

Many women found that weighing out the family rations weekly gave them a real business insight as to what was being used and just what the cost of feeding the family was. We believe the adoption of a ration means the beginning of a great thrift movement amongst women.

Each agent as she visited her clubs had a definite demonstration to give her club women of the amount of fat formerly used by the average American per week—twenty-eight ounces—and the amount actually needed—eleven ounces—and the amount the Germans used after the first year of the war—five ounces. These fats were weighed out and shown on platters. A similar demonstration was given in sugar—the one and one-half pound formerly used by the American, the three-fourths to one pound necessary, and the small amount used by the French. These demonstrations were very effective. Christmas candies made of molasses and syrups instead of sugar turned out very satisfactorily. Pop corn balls with molasses as a binder were popular. Women were made to see that a man over forty years of age, who is not doing hard manual labor, does not need more than two or three red meat meals per week, and even if he should grumble at the reduction in his savory portion she could content herself with the fact that he was getting all he could take care of properly and that she was probably saving him trouble with overworked digestive organs.

To promote the making of cottage cheese in the home, the Dairy Division of the United States Department of Agriculture, the Dairy Division of the State College of Agriculture, and the State Division of Home Demonstration Work cooperated in sending out to the counties a specialist in cottage cheese making.

Five counties were selected in North Carolina—Cleveland, Iredell, Lincoln, Mecklenburg, and Rowan—for intensive work in cheese making, and a three months campaign was put on.

The specialist was in close cooperation with the county home demonstration agent, who selected the communities most interested as demonstration centers.

Meetings of farm and village housewives were called and not only were practical methods of cheese making at home demonstrated, but demonstrations of cheese dishes as meat substitutes and the proper care and use of milk were given. Most of the women who attended the demonstrations used the cheese that they made at home, but some of them are finding a local market for the surplus. One woman who learned to make very fine cheese

is marketing from ten to fifteen pounds per week. She adds a little cream, puts it in paraffin-covered cartons, and sells it at 35 cents per pound. One thousand five hundred women reported making cheese for home use.

The cheese specialist says in her report:

In September and October I gave several demonstrations at schools and I believe the results will be most encouraging. I cannot get full reports as the schools have been closed for several weeks on account of influenza, but one school, Edneyville, in Henderson County, with about one hundred students, reports that twenty-five are making cheese as a result of the demonstrations. At these school demonstrations I stressed the value of milk for young people and also the value of cheese—more stress on the school lunch than any one way of serving it. One thing so interesting to me was the attitude of the children toward the demonstration. Very few knew what the cheese was—since it wasn't yellow. They would follow each step, and when I got through I would mould it—either plain or with pimentoes—and I used lettuce, parsley, or nasturtium leaves and blossoms for a garnish. They were delighted to see how beautiful a few leaves could make it look and that I used something that they could have right at home. Of course I let each child taste the cheese and almost without exception it was liked. Nearly every child would promise to make some at home. Even the boys made it. After the demonstration I always had some child tell just how to make it and asked simple questions on the value of milk, care of cow and milk, etc. I believe that more work can be done through the children than through the parents.

Number of women making cottage cheese	1,500
Number of pounds made (per week)	2,000
Number of county demonstration agents giving demonstrations	15
Number of exhibits at fair (six)	31
Number of dairy products luncheons served	24

WORK AMONG THE COLORED PEOPLE

The colored people of the State have shown great interest in all methods of producing and saving food, and to promote work amongst them nineteen counties and two cities were selected in which to do intensive work. In each of these counties a negro assistant to our white county supervisor was appointed. These assistants are employed for two months and are expected to travel about the country and to show the negro housewife how to garden, can, and dry. A great deal of work is also done in demonstrating the preparation of food, the balancing of rations, and in sanitation.

In counties which have no negro assistant the county agents demonstrate at negro meetings, speak at negro churches, and render all the assistance possible to our loyal negro population. Our specialists and district agents are sent to special negro meetings, and they report great interest.

The following letter from a committee of colored citizens tells of its appreciation of what was done through Home Demonstration Work in New Bern:

We feel proud of the work because our efforts have been crowned with success. In these perilous times, when each person should be taught the lesson of thrift and economy, we have truly done our "bit" in helping to teach the colored people of New Bern the value of this lesson. The people have received the instruction with open hearts, being ready at all times to assist in helping to make our first effort a success.

Mary E. Tyler, the efficient Domestic Science teacher of West Street Graded School, has been in charge of this work and the committee cannot say too much by way of praise for her untiring efforts for the work committed to her charge.

The following is a report of the work done: During the four months seven canning, three cooking and one laundry club were organized; 136 women were enrolled in the different canning clubs, 68 in the cooking and 27 in the laundry.

Eight canners were bought and used, the members of the canning clubs furnishing the money for the same. Each club also contributed $1.25 for a load of wood for use in the same.

One hundred and twenty-six consultations, 88 meetings, and 52 demonstrations were held, 1,142 bulletins sent, 139 club members visited, 432 war gardens organized and 103 visits made to clubs.

Reports from the various clubs and sections show 1,724 quarts of material as saved. The work has covered canning, preserving, pickling, brining, drying, and jelly-making.

The work of both the laundry and the cooking clubs has been quite a success, the members of the latter have given to the class a supply of towels, glass and chinaware, and also many other useful articles for cooking purposes.

"Hooverism" has been our main thought, and "waste not" our motto in all our work.

The clubs are now forming themselves into a union in order to do a much larger and better work another year.

Fig. 7. Home Economics Exhibit at one of the 139 Community Fairs Held in the State During 1917

The Home Demonstration Agent of Wilmington says of work done by her colored assistant:

On February 1, 1918, the New Hanover Food Commission employed for me two colored assistants with previous Home Economics training. These

young women immediately set about to form War Cookery classes and have been quite successful. They went before every colored organization in the city and stated the object of this work and urged the negroes to take a stand with Mr. Hoover. As a result, there are ten War Cookery classes in the city of Wilmington for colored people. Of course our previous training in Home Economics is valuable now, but cook-books of two or three years ago are absolutely out of date. In order to be able to teach War Cookery, my two assistants meet me each week for instruction. At my laboratory they work out recipes and are then prepared to go out and demonstrate them to their own people.

In the story of the work done by the city agent of Wilmington and her colored assistants mention is made of the fine cooperation of the negro preachers in turning the powerful influence they wield over their congregations in favor of the conservation and production of food.

The Durham County agent says:

I have one colored preacher who is well educated and an enthusiastic canner. He cans all the surplus from his garden, which he cultivates himself, and is a shining example to his neighbors. He asked permission to join the club.

In one of the counties in which there is no colored assistant but where the home demonstration agent does all in her power to help the colored people, two colored women were present at a demonstration. They were so much pleased with the instruction in canning they had received that one of them came to the agent and said, "Miss, you have been mighty nice to me, and I want to do something for you. I went home to see if I could find you a watermelon, but there are not any but little ones. If you will have one of these I'll run home and meet you down the road with it." It is needless to say the agent met her down the road.

Summary of Colored Work

Girls' clubs organized	155
Women's clubs organized	711
Girls enrolled	2,225
Women enrolled	2,519
Demonstrations held	927
Winter gardens	1,718
Number cans and jars filled	474,872
Number pounds dried	82,077

The counties organized in Home Demonstration Work are: Anson, Chowan, Durham, Edgecombe, Forsyth, Iredell, Moore, Mecklenburg, Pitt, Person, Robeson, Vance, Wake, Cumberland, Gaston, Halifax, Rowan, and Wayne. The cities are New Bern and Wilmington. It is our plan to place colored assistants in 22 additional counties in 1920, which will make a total of 42 counties organized for work amongst colored people.

CITY WORK

City work in the Home Demonstration Division has been on trial for 18 months. Asheville, Winston-Salem, Charlotte, Durham, Raleigh, Wilmington, and New Bern being the cities selected. The women supervisors appointed are as a rule quartered in the Chamber of Commerce and cooperate

closely with that organization, and with the Food Administration, women's clubs, churches, and any other organization.

They have not only put on just such conservation campaigns as have been described in county work, but have spent a great deal of time in promoting city gardens and community canneries.

Reports of work from five city agents show a total of 517 meetings for the year, with an attendance of 52,355.

Perhaps the best idea of what is done in city work can be given by reports of the women who conducted it in the different localities.

The Wilmington agent says of her work:

My duties as City Home Demonstration Agent began November 4, 1917. After two weeks of office work, during which time I met a good many women of the town, the work of organization began. I then undertook to meet with the various women's organizations of the city, and where possible substituted for their program a Home Demonstration one. The first club to begin this work was the North Carolina Sorosis. With twenty-five membeen enrolled we began our work for the year. The first few meetings were devoted to a study of the food situation and just how the average housewife could help in the conservation movement. Later we took up the work of conservation in wheat, meat, sugar and fat substitutes and gave demonstrations weekly. Special attention has been given all along to wheat substitutes and at least three-fourths of the demonstrations given in the city were on these lines.

During the early weeks of my work I visited the schools in the interest of food conservation and organized at one school in the poorer district of the city a Home Demonstration Club. This club has fifteen members who attend very regularly. Once a week it meets and carries out in a practical way the plan of work I outline.

Another Home Demonstration Club in this section was organized, with an enrollment of eighteen women, and I do not have a more enthusiastic one. It carried out the conservation program, special interest being shown in the fireless cooker and the recipes for dishes prepared in it.

I had another fine Home Demonstration Club at the Church of the Good Shepherd, with thirty-five members.

The members of the Junior Class of the High School have agreed to become a canning club. It is their plan to can two days each week for persons in the city who have a surplus of vegetables.

After organizing the clubs for the white people the question of conservation among the colored people came up, and we arranged a most successful meeting with the Negro Ministerial Union, at which time I explained my work in the city. I was invited to attend the various colored churches and to make short talks. The ministers in the meantime had pledged themselves to preach at least one sermon each month on conservation, and invited me here and there to give demonstrations of wheat substitutes, sugar saving, etc., before colored organizations.

On February 1, 1918, the New Hanover Food Commission employed for me two colored assistants with previous Home Economics training. These young women immediately set about to form War Cookery Classes and have been quite successful. They went before every colored organization in the city and stated the object of this work and urged the negroes to take a stand with Mr. Hoover. As a result, there are ten War Cookery Classes in the city of Wilmington for colored people. Of course our previous training in Home Economics is valuable now, but cook-books of two or three years ago are absolutely out of date. In order to be able to teach modern cookery my two assistants meet me each week for instruction. At my laboratory they work out recipes, and are then prepared to go out and teach their own people how to use home-grown food.

As spring came the Food Commission, with the help of the teachers and principals of the city schools, began a back-yard garden campaign. The first

real work done was by the Superintendent of the City Schools, who explained to the children the plans for this campaign. Later the County Demonstration Agent, the Farm Demonstrator, and I visited each school in the interest of garden work and paved the way for the garden specialist from the State Department of Agriculture. When the number of gardens was estimated by the sanitary police of the city we found that we had three thousand. Very few plots have failed to be cultivated and the campaign has been successful in no small measure. The colored people have responded to the call for increased production and every back-yard has a garden.

The Food Commission had printed, for the benefit of those interested, 7,000 garden bulletins. These were distributed in the city and county.

On many occasions I have been called upon to make talks before various audiences. To these calls I have tried to respond.

There was held in this city May 21, 22, 23, and 24 a Canning School for all Home Demonstration Club leaders, both white and colored, and others interested. Attendance was fairly good and the County Home Demonstration Agent and I both feel that some good has been accomplished. The colored people were especially interested and willing to learn. The program included wheat substitutes, fireless cookery, jelly and preserve-making, canning in tin and glass by the hot-water and steam-pressure process. With the opening of the garden season we are expecting to fill many containers. In fact there have been numerous inquiries about canning.

November 4, 1917–May 28, 1918

Number of clubs (white and colored)	18
Enrollment (white and colored)	236
Number of meetings (demonstrations and talks)	221
Total attendance	7,211
Number of bulletins	8,418
Number of consultations	510
Number of fireless cookers made	6

A page from the weekly report of the Winston-Salem agent says:

Monday I went with Miss Lyon, Y. W. C. A. Welfare Worker, to the Hanes Mill and met several girls and women; made plans with these girls for a conservation class in the Y. W. C. A., or in their homes. In the afternoon I had a conference with one of our prominent women about the needs of factory girls and women and discussed the best way to reach them.

Tuesday I went to the Moline Mills to meet the girls, then also spoke to the Y. W. C. A. Board about my work and asked for their cooperation.

Wednesday was spent at the Cannery. I installed the standard weights for cans there and cans are now "measuring up."

Thursday and Friday were both spent at the Cannery, where I met many of the leading women of the town.

Saturday—office work.

The New Bern agent writes:

I agreed to conduct a class in Red Cross dietetics and was much gratified to have twelve of them pass the examination with a grade of 90 and receive Red Cross diplomas. Even if these women cannot go abroad the course they received will enable them to be of great help in an emergency in this country. The oldest member of the class, who is sixty-five years old, passed with a grade of 99.

Through the school children we have been able to do a big work in thrift gardens. In answer to the questionnaire sent out to the citizens of New Bern we have estimated that there are about 900 gardens.

GARDENS

The past season has been a lean one so far as vegetables are concerned. The cool spring, followed by the drought and parching suns, played havoc with such things as were planted. It was those only who had the patience to replant or who were fortunately located who had an abundance for the table and a surplus for canning. A record of the number of spring and summer gardens has not been sent in, but it can be estimated by the five and one-quarter million cans that were filled last summer with fruit and vegetables and the large number of pounds dried and brined. Of winter gardens 8,151 have been recorded, which shows we are beginning to realize what our soil and climate will do for us in all-year-round gardens.

Many of the canning club girls have been compelled by shortage of labor on the farm to leave their gardens and turn their attention to the crops. An example of this is seen in the case of Miss Violet Willoughby, not over 15 years of age, who, with her widowed monther, ran a farm in Pitt County. She reports that she filled only 775 cans with the products of her garden, because the tobacco crop needed so much of her attention. "I believe," she said, "I could have canned twice as much if I had had the time, but I had to do my canning at night, and was often up very late that I might give the daylight hours to the tobacco."

Ella and Delma Beddard, from the same county, both under 18 years of age, each grew an acre of tobacco, from which they realized $500 each, making a total of $1,000 which they could put in the bank. These girls, in addition, filled, by working together, 475 cans with vegetables, which they brought to town and sold at $2.65 per dozen, adding $104.67 to their bank account.

One of these girls is paying her way through a preparatory school and the other is keeping house for her father.

COMMUNITY CANNERIES

The small garden output was against the stimulation of interest in community canneries, but there were operated in North Carolina, exclusive of the canning operations carried on by the canning clubs, 132 community canneries with an approximate output of 357,688 cans.

All of these canneries have been doing good work and are proving to be schools in which the town housewife can learn how to conserve her garden products in a way that will insure their keeping through the winter. Housewives were encouraged to bring their vegetables to the community center and either prepare and can them themselves or pay a few cents extra per can and have them filled by the women operating the cannery.

In Winston-Salem, which just began operating this summer, the young girls organized themselves into a motor corps to collect vegetables from the city gardens and carry them to the cannery. They also assisted the patriotic women of the town who volunteered for service in the cannery in preparing vegetables and fruits for sterilization. The Home Demonstration agent in charge of the cannery said of it:

I am so proud of our cannery pavilion, situated in the center of town. It is 24 x 24 feet, is well screened, and is the nicest possible place to work. I wish you could have seen the Rotarians piling in to see us yesterday. They had lunch somewhere and then adjourned and came to the cannery in a

bunch. They are as proud of it as we are. The ladies and girls of the town are working beautifully and we filled 190 cans yesterday. That was a good beginning, wasn't it? When we get thoroughly well broken in we can turn out many more than that per day.

In a good season, with plenty of help, it is not unusual for a community cannery that has been in operation long enough, to prepare, fill, and sterilize 400 cans per day.

Down in Halifax County at the Roanoke Mills Community Cannery, where from fifteen to twenty women bring their vegetables and can them, they have many records of 400 cans and over per day. This cannery has been in operation for two seasons and has long since passed the experimental stage. The big community canner and dryer installed at Rosemary has a capacity of over 500 cans per day. The big dryer can accommodate all the surplus vegetables for miles around. It is the patriotic determination of this community to let nothing go to waste.

In Charlotte community canning was done at the school houses, the Home Demonstration agent dividing time in the different sections. A report of the work done in one of these sections says:

We had a very good day at the South Graded School with the women using the steam-pressure canner for the first time. The ladies were very much interested and very glad they were going to be able to can without using so much time. Some very pretty jars of peaches, tomatoes, and corn were canned.

The Raleigh cannery was situated in the market house, two stalls being donated by the city for the purpose. The "Rotarians" screened the sections, equipped them, and had them ready for beginning operations the second week in August. The cannery began work when the vegetables were almost gone, but has demonstrated that community canning in a city can be made a profitable thing to the city housewife if she will avail herself of the opportunity offered her. String beans, tomatoes, soup mixture, and cornfield peas were the principal output; and in spite of the season and the late beginning the cannery closed with a few dollars to its credit.

DRYING AND BRINING

A great deal of interest has been manifested in drying and six large community driers have been established in addition to the small home driers that have been used. A total of 228,903 pounds of fruit and vegetables dried is reported.

The dried products that were sent to the different fairs for exhibit have been very good, so good indeed that we have had an offer from a commercial house to take the surplus of our community driers.

The drying of apples in quantity and the proper commercial packing is some day going to put North Carolina on the market with a good salable article.

Brined vegetables have not been so popular, but a total of 106,405 gallons have been recorded. This is largely in cucumbers and other vegetables for pickling and in sauerkraut.

HOME DEMONSTRATION WORK IN THE MILL VILLAGES

Fifty-nine mill owners have shown a fine spirit of cooperation by doing all in their power to further home demonstration work in the mill villages. Twenty of them, at our suggestion, have placed trained home economics women in the villages to instruct, and in many other mills the trained women already employed turned their efforts to food conservation under the direction of the County Home Demonstration agent.

At Badin, where the big aluminum plant is located, we have placed, at the request of the management, a good home economics woman whom it pays to supervise home demonstration work in the village homes. This plant has converted an old barber shop into a spick and span community kitchen, where all kinds of home cooking can be taught and where canning operations were carried on in the summer. Near this kitchen a dairy building has been made of a former meat market, that the people may be supplied with clean, wholesome milk. This is under the direction of the Home Economics Supervisor, and she says of it: "It is snow white all the way through, and is beautiful. My only fear is that I will never keep white enough to stay there. Everybody in town has noticed the place and has expressed his appreciation of it to me."

The Stanly County agent says:

The largest steam-pressure canner I have ever seen has just been installed at the Wiscassett Mills for the mill people. The canning club supervisor there and I tested it last Thursday and found it worked beautifully. A great deal of canning has been done at Wiscassett the first week. The people are very much interested in canning for the home table every vegetable and all the fruit they can get. They average 800 cans per week in the big canner.

In the spring of 1918 in the little cotton mill village of Rosemary, N. C., every one was greatly concerned over the vital question of food conservation. It looked as if the war might last for many years and with the high cost of food the mill management feared suffering and hardship among the mill employees.

Fortunately, at the head of the mill was a man of great consideration and forethought, and he conceived the idea of producing and conserving enough food in the mill village to take care of the people living there. He called the county home demonstration agent in for a conference and they decided on a cannery with good equipment and a dehydrating plant. A gardener was called in and thirty acres of land put in order and divided among the employees. These were planted with all kinds of vegetables and worked by the villagers after mill hours. It was a wonderful sight on late summer evenings to see whole families working their plots. Two experts were called in from the State Horticultural Department, one to give advice concerning the soil and the other to select the best type of dehydrator to use.

Dr. Lund, of the United States Department of Agriculture, was telegraphed for, as the time was short and so much to be done. He helped select steam-pressure outfits and all kinds of labor-saving devices. A building 24 by 40 feet was planned—one-half of the floor to be of concrete, with a drain to carry off water. Surplus steam from the mill was used for heating water for the hot-water canner and for running the pressure canners; also for heating the drier.

Only a few weeks until the canning season, the building to be done and machinery ordered. A Government permit was secured from Washington and the big pressure canners from Little Rock came through in a few days. Submarine trouble on the coast delayed the dehydrator, which had been shipped from New York. But finally it arrived and the work was begun.

The mill owner wished to have the most efficient plant possible and not once did he mention a cheaper price of machinery. Consequently when the little building was completed it was a marvel.

The architecture was of a bungalow type, with wide, overhanging eaves. A most attractive doorway was at the front and seventeen casement windows furnished light and air. At the back there was another doorway with an arrangement for unloading vegetables from wagons. Inside there was sufficient storage space in closets for jars, cans, etc.

The dehydrator with its motor occupied an entire corner of the building. Larke racks on casters were conveniently near; then came two hot-water canners and two steam-pressure canners. An immense dump scalder was near the entrance where the vegetables were brought in, and a large vat on rollers for cold water could easily be moved over to the canners for cooling the cans rapidly. Potato peelers were installed and devices for peeling and slicing fruits and vegetables. An electric tipping iron was used, and for the little children there was an arrangement for them to stand on in order that they might not tire themselves with reaching too high.

Tables in a mission design covered with heavy zinc were arranged down two sides of the room and across one end. Stools of the same design were ready for the workers and lessened the fatigue.

Large overhead electric fans cooled the building and brilliant lights made canning at night a joy for mothers who could not leave their babies during the day.

Miss Anna M. Rowe was sent to take charge of the plant. Each worker was given a number and an accurate record of all her work was kept. Cans and jars were bought by the mill and employees were charged with the number used—at cost. All cans and jars were bought early in the season by the Home Demonstration agent for the whole county, and in this way considerable money was saved. Paper cartons were used for storing dried products.

The plant was a little late in starting the work as it was difficult to assemble the equipment. It was also a question as to whether the women would take up the work or not; but as soon as the doors were opened a steady stream of workers poured in, day and night. Hours had to be regulated and a schedule made out for certain vegetables on certain days. In this way confusion was avoided and Miss Rowe was better able to conserve her own strength. The cannery was the "show place" of the county and people for miles around brought their produce to "see how it worked."

On the whole it was a wonderful success, and in another year bigger things are hoped for; but for the beginning the results were satisfactory. About ten thousand cans and jars were put up and sixteen hundred pounds of dried products stored.

During the winter months the women meet and have sewing and cooking lessons five days in the week. Steam heat makes the building comfortable and good sewing machines have been installed. A kindergarten takes care

of the children and it would be hard to estimate the effect of all these benefits on the minds of the mill employees.

Free band concerts, a library, and a park for amusements complete the happiness of these people. Do you wonder at Rosemary being a village of contentment?

Institutions

At the State Hospital for the Insane, where one of our supervisors has been employed for two years, they canned 27,000 quarts of fruits and vegetables last summer, against 35,500 quarts the year before, a good record considering the lean year.

Other institutions are using our methods and wholly or in part supplying their needs.

HOME DEMONSTRATION FORCES IN THE EPIDEMIC

The epidemic of influenza, beginning last October, gave the North Carolina Home Demonstration agents an opportunity of proving the worth of their work to the counties, and just what it meant to have at hand a ready-formed organization through which systematic relief could be effected. This epidemic also proved the value of a scientific knowledge of food values and just how useful training in home nursing can become when regular trained nurses are not to be secured or can be had only as heads of crowded wards.

At the beginning of the epidemic each Home Demonstration agent was asked to drop what she was doing and to bend every effort toward helping to organize relief work for the sufferers in her territory.

Letters were sent out from the State office of Home Demonstration Work advising the establishment of diet kitchens in stricken communities and the organizing of club women into groups of volunteer nurses. Letters have come into the central office telling of the success of these plans.

Down in Wilmington, where the epidemic was perhaps worse than at any other point, Miss Mary Clifford Bennett, City Home Demonstration agent, with the assistance of Mrs. Grant, the county agent, opened a soup kitchen that ran day and night. From the very start two to three hundred gallons of soup were dispensed daily, and with the five volunteer helpers this kitchen became the center for relief work in the city.

Supplies and money poured in and this kitchen was able to show a clean sheet, so far as debts were concerned, at the end of each week. So well indeed was this kitchen managed that Colonel Stiles, of the United States Public Health Service, commandeered our agent in charge and carried her around to assist in the organizing of other stricken communities.

Mrs. J. H. Henley, Western District Home Demonstration agent, assisted Mrs. Hanamon, the agent for Buncombe County, to organize a diet kitchen in Asheville. She says:

We rise about seven o'clock in the morning and go down to the soup kitchen, which is in the Masonic Temple, as soon as possible and remain there daily until seven-thirty at night. I do wish you could step in about eleven-thirty some day and see us at our rush time. It was only last Saturday that interested men and women came together to form the Influenza Relief Com-

mittee of Asheville, and that the County Agent and I offered our services, and in this short time we have the kitchen going with a complete card system of delivery. This card system is operated by the husband of our County Agent. When a call comes in a card is made out, a written order sent down to the kitchen, the women pack a basket filling the order, put it on a dumb waiter and up it goes to the applicant.

For the very sick we send chicken or beef broth, buttermilk and eggs. For those who are convalescing heavier soups, baked potatoes, baked apples, custards, Spanish cream, jelly and good bread are sent. Our gas range is about ten feet long and the ovens are kept full of potatoes, apples, chicken, and beef. On the top of the range are our pots of soup, vegetables, and cereals.

We have about twenty volunteer women washing and sterilizing milk bottles and packing baskets. Every morning a certain number of gallons of soup goes out to Elk Mountain, our branch station. A long line of volunteer automobiles are always ready to take baskets to any address given. In each basket goes a printed card of information regarding the feeding of influenza patients, and in our card index we have the data regarding each family to which deliveries are made.

FOOD DELIVERY CARD

Date.....1918.

Name .....
Address .....
No. sick.....No. well.....No. convalescent.....
Were containers returned?.....(State "yes" or "no").....
General remarks .....
Delivered by .....

KITCHEN RECORD

Name .....
Address .....
No. sick .....
No. well .....
No. convalescing .....

Date	Condition and General Remarks	Containers Returned	Delivered by
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

Be sure and report if containers are returned or not.

Large green cards, bearing the inscription "Influenza Relief Workers" are on our automobiles.

Our supply shelves resemble a small grocery store. Nearly everything is donated and money and checks are continually coming in from our liberal citizens.

This kitchen fed over an average of three hundred daily, and was in operation four weeks.

In Sampson County the Home Demonstration agent went into Clinton, the county seat, where she found in some instances whole families stricken. The mayor, at her request, called a meeting of the people. They secured volun-

teer nurses and volunteer cooks for soups and other nourishment until the community diet kitchen could be established. Mrs. Lamb says:

The State Board of Health sent a representative to talk to us about the management of the disease and we sent out our volunteer nurses and our food to the sick. Men offered their machines, and with them we would send a woman carrying nourishment, Red Cross mustard plasters, masks, and bottles of Dobell's Solution. We are sending men and women to every township in the county, and are making a survey for the doctors, getting names and places that all the sick may be reached and cared for.

Miss Lucile Clarke, Home Demonstration agent for Columbus County, writes:

I have been put in charge of the emergency hospital, which we opened in the courthouse at Whiteville. I am really the only available woman to take this responsibility, as we have tried to get trained nurses and cannot. I am organizing volunteer help that we may know on whom we can depend. The soup kitchen which I have been running, I am thankful to say, can be turned over to the Domestic Science teacher, who is fully capable of attending to it.

Miss Sallie Hunter, Home Demonstration agent for Cabarrus County, writes:

I am at Kannapolis, our largest mill town, this morning, to turn our cannery building into a soup kitchen. It is ideal for the purpose.

There were over eight hundred people absent from the cotton mill today, which will show you how much our efforts are needed. The Y. M. C. A. director is having our soup distributed by the Boy Scouts, and we are sending it out in glass jars fitted into the pasteboard boxes in which they were bought. This keeps the soup hot.

Of one of our agents, the chairman of the Relief Committee, writes:

We Pender people know Miss Eva Logan to be a young woman of fine public spirit. Her self-denial in the recent Spanish influenza epidemic in visiting and comforting the sick was revealed in a most effective manner. She played her part in fighting the influenza in a way that we deeply appreciated.

Many of the mill villages reported serious conditions amongst their employees. Miss Pickens, county agent in Gaston, writes:

Conditions at Loray Mills became so desperate that the old school building was turned into an emergency hospital.

I organized a kitchen force and helped with supplies and equipment. Kitchens were established in every mill village. It was necessary for me to take charge of the last kitchen organized at the Ozark Mills, as so many of the volunteers were sick. During the eleven days we served meals to more than one hundred people in homes where every member of the family was sick at the same time.

In Stanly County Miss Mabel Bradsher, county agent, established four soup kitchens; some for the mill villages and others for the town people, herself working night and day. The manager of one of the mills in a sorely stricken village has written us the following letter:

We want to say a few words for your representative in this county, Miss Mabel Bradsher.

During the influenza epidemic here we had nearly two thousand cases in our mill village. The situation was so serious our entire plant was closed down for about fifteen days and our graded school building turned into a temporary hospital. Several of our doctors were sick at that time and we were obliged to call for outside aid. We turned our day nursery into a diet kitchen and Miss Bradsher volunteered to take charge of this work; also the diet kitchen in the temporary hospital. During three or four weeks we served several hundred people each day with nourishment. Miss Bradsher gave her entire time to this work. Since that time she has done nursing out in the county, wherever the people were in need and had no help.

This young lady has shown unusual ability and has won for herself many friends and much favorable comment in this community. In this connection we want you to know that we are thoroughly in sympathy with the regular work being done in your department; and if you have agents in every county up to the type of Miss Bradsher, much good is being accomplished.

Miss Sloan, the Wayne County agent, went out to nurse in a family of nine, where every member was sick, and she afterward cooperated with the teachers in the neighborhood to make and carry soup to the sick.

Miss McQueen, the agent in Washington County, writes:

Our club women are doing splendid work in helping to care for the influenza patients. We have the soup kitchen, to which I give all my time. Our men have told us to spare no expense.

Miss Martin, agent for Harnett County, says:

I began by nursing two influenza patients and taking care of the baby in the home where I boarded. The cook was sick and I also had to do the cooking for the family of seven. As the epidemic became more severe the ladies of Lillington and I organized a committee of housewives to make soup in their own homes and send out to the sick. We also saw to the placing of volunteer nurses in homes where they were needed most.

The negroes were sorely stricken and the number of cases so great that the local physician just could not attend to them all. Two of the town ladies accompanied me to the homes of the colored people and under the direction of the physician we took temperature, observed conditions, threw open windows, and gave simple directions to those who were attending to the sick. We made reports to the physicians of just what we found and he endeavored to reach the worst cases first.

I had a mild case of influenza myself, but could not afford to stop for it long as there was so much needing my attention.

Miss Allie Stribling, county agent for Nash, reports establishing a soup kitchen exclusively for colored people, as well as one for the white.

In Duplin County Miss Cobb used the mail boxes along the county roads as distributing points for influenza literature.

In Durham County Miss Simmons writes:

From Sunday morning to Saturday night I have gone as fast and as far as possible. nursing the country cases of influenza. At first I prepared soup, then I found that people who were unable to do the work most needed (actual nursing) could prepare soup in abundance, and I turned my attention to nursing, having had a great deal of experience in this line.

I nursed night and day, going into homes and cleaning up both the houses and the children. I took temperatures, gave medicine and nourishment to the patients, and in several instances even assisted in preparing the dead for burial.

Mrs. Blalock, Wake County agent, nursed at the State College of Agriculture and Engineering from the beginning of the epidemic, and was one of its most valued nurses. She afterwards did regular duty as a nurse in the Raleigh emergency hospital, being an excellent practical nurse.

Mrs. Capehart, Granville County agent, was called to organize a diet kitchen in a large orphanage supported by the Masons of the State. She says:

After our community diet kitchen had been in operation for about a week there was a call for help from the Oxford Orphanage. They were in desperate need as there were more than 200 sick children and only tiny little girls and boys to do the greater part of the work of preparing food and waiting on the sick. It was really pathetic to see the conditions there. From the beginning we had a big job, but our women worked so faithfully and willingly that we put it through finely. We had eighty-five women who volunteered to cook. We divided them into squads with certain hours for each squad. The first squad went on at four-thirty a.m. to cook breakfast, the next at nine a.m. to cook dinner, and the third at three-thirty to cook supper. The patients were in six cottages and a hospital and the food was prepared in the Domestic Science room so that the regular kitchen of the institution might be left free for the preparation of meals for the well people. We cooked for 250 people and the dishes and food were delivered by men and boys who came from the town three times a day. Women, who under ordinary circumstances did no rough or heavy work, took hold with a good will and did anything that came to hand, rising at four o'clock in the morning, day after day, as cheerfully as if they were getting up to take an early train for a pleasure trip. This epidemic has shown us that surely "He is sifting out the hearts of men before His judgment seat."

When the Tank Camp sick soldiers were moved to the A. and E. College emergency hospital, the number of patients made it imperative that a real diet kitchen, well organized and systematically run, should be established. Headquarters in Raleigh sent for Miss Annie Lee Rankin, one of the specialists, and she, together with Miss Wingfield, Central District agent, set going a most efficient kitchen, where charts were kept of just what each patient needed, when it was to be given him, and just how it was received. This relieved the nurses of any thought of the patient's food, and a large number of sick men were systematically and regularly nourished with the proper forms of diet. Miss Wingfield was a most efficient nurse in the first great emergency at the State College of Agriculture and Engineering, and it was only when the situation improved that she could be spared to organize the diet kitchen, where she worked as long as she was needed.

At the emergency hospital in Raleigh, containing more than one hundred patients, Mrs. Morris, Home Demonstration agent for the Tidewater District, and Mrs. Smith, Eastern District agent, established a similar diet kitchen. Mrs. Morris had previously organized the relief work in the mill village of Rosemary, where many sick were supplied with soup.

Mrs. Estelle Smith, the Eastern District agent, was detailed for one week to nurse members of the extension staff who were very ill. Since that time she has been organizing relief work in all of her counties.

Miss Bogle, in Forsyth; Miss Coble, in Chowan; Miss Penny, in Davidson, and Miss Avra, of Pitt, and every other Home Demonstration agent who was in a county where there was an epidemic of influenza, measured up in a

wonderful way to the situation. In the general plans of work the story of one woman's efforts might be the story of all. It was quite a remarkable thing that so small a number out of a Home Demonstration force of eighty-nine workers succumbed to the disease.

Agents from fifty-five counties reported organizing influenza work. Ninety-one community diet kitchens were established through their efforts, serving on an average 150 people daily; and in thirteen counties certain family kitchens were used as soup distributing centers. All the volunteer automobiles necessary were at hand to deliver the nourishment, and interested citizens and farmers furnished the money and supplies.

Rest rooms established	23
Pounds butter made	158,381
Advance per pound (average) (cents)	13

County Agents' Statistics

Miles traveled	294,954
Meetings held	8,250
Attendance	826,283
Demonstrations by agents	5,725
Demonstrations by women club members	1,692
Number of visits to clubs	6,525
Demonstrations by girl club members	1,390
Number of visits to club members	77,792
Number of letters written	51,032
Number of visits to others	7,073
Number of circular letters written	69,838
Number of bulletins sent out	272,695
Number of conferences held	48,510
Number of fireless cookers made and purchased	1,022
Number of fly traps made and purchased	2,165
Number of fly screens	7,684
Iceless refrigerators, mops, ironing boards, roller trays	4,968
Waterworks installed	410
Lighting systems installed	20
Churns, butter molds, thermometers, butter workers, butter paddles, shotgun cans	3,381
Separators	6
Hot water canners purchased	1,664
Steam-pressure canners purchased	41

District Agents' Statistics

Miles traveled	26,509
Number of meetings held	314
Attendance	26,076
Letters	3,645
Circular letters	1,457
Bulletins	11,614
Conferences	2,404

State Agent's Statistics

Miles traveled	2,452
Talks given at meetings	67
Attendance	7,344
Letters	2,636
Circular letters	8,927

SUMMARY OF CANNING FOR A PERIOD OF SEVEN YEARS, 1912-1918

Year	Number Counties Organized	Number Girls Reporting	Number of Cans and Jars	Value of Products	Total Cost	Total Profits
1912	14	229	33,019	$ 3,301	$ 825	$ 2,476
1913	14	235	70,000	7,000	1,750	5,250
1914	32	814	259,019	35,361	9,425	25,935
1915	37	2,386	633,447	104,241	28,985	75,256
1916	44	3,453	680,551	117,816	29,432	88,383
1917	60	*14,382	8,778,262	2,179,362	544,843	1,634,519
1918	73	*16,663	5,860,700	1,374,690	342,134	1,032,556
Totals	274	38,162	16,315,098	$3,821,771	$6,957,394	$2,864,375

*This includes both women and girls in the Home Demonstration Clubs and Canning Clubs respectively.

*For 1917-1918, in addition to the club women, 150,000 housekeepers filled cans with garden produce for winter use and helped materially in swelling the number reported

Respectfully submitted,

JANE S. McKIMMON,

State Agent.

FOOD CONSERVATION STATISTICS

COUNTIES	Enrollment	CONTAINERS—TIN AND GLASS			NUMBER POUNDS FRUIT AND VEGETABLES DRIED			NUMBER GALLONS VEGETABLES BRINED			Money value of Total Products canned dried brined	Profit from Total Products
		Organized Clubs	Emergency Work	Total	Organized Clubs	Emergency Work	Total	Organized	Emergency	Totals		
Alamance	70	6,623	15,000	21,623	.....	1,000	1,000	....	5,000	5,000	$ 5,437	$ 4,127
Anson	700	83,239	90,000	173,239	1,350	2,000	3,350	150	150	300	43,034	32,275
Avery*	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
Beaufort	380	11,025	.....	11,025	125	.....	125	22	.....	22	3,017	2,263
Bertie	585	75,407	75,000	150,407	125	700	825	19	500	519	28,494	21,375
Bladen	55	2,026	.....	2,026	.....	.....	.....	....	.....	.....	445	334
Brunswick*	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
Buncombe	583	65,200	68,000	133,200	.....	.....	.....	....	.....	.....	33,800	25,350
Cabarrus	125	22,492	30,000	52,492	500	1,000	1,500	50	100	150	10,780	8,086
Catawba	257	102,300	38,702	141,002	11,000	2,167	13,167	....	1,542	1,542	60,543	46,172
Chatham	112	4,940	4,050	8,990	275	275	550	7	56	63	2,010	1,507
Cherokee	165	.....	1,505	1,505	.....	2,500	2,500	....	500	500	714	539
Chowan	143	35,518	12,000	47,518	50	50	100	150	100	250	7,512	5,638
Cleveland	132	25,351	15,000	40,351	2,485	.....	2,485	....	.....	.....	11,984	8,988
Columbus	800	36,720	50,000	86,720	196	200	396	30	1,000	1,030	21,439	16,090
Craven	257	1,772	38,702	40,474	49	2,167	2,216	2	1,542	1,544	8,703	6,548
Cumberland	92	7,535	10,000	17,535	.....	.....	.....	....	.....	.....	4,085	3,064
Davidson	154	92,762	60,000	152,762	.....	1,000	1,000	....	.....	.....	44,009	33,007
Duplin	330	36,142	20,500	56,642	600	50	650	600	200	800	17,237	12,904
Durham	129	87,672	7,000	94,672	3,750	200	3,950	62	100	162	21,840	16,382
Edgecombe	296	40,215	40,000	80,215	1,117	.....	1,117	74	.....	74	16,212	12,159
Forsyth	143	60,726	.....	60,726	880	2,167	3,047	8	1,452	1,460	11,777	8,846
Franklin	190	28,764	6,000	34,764	2,258	100	2,358	648	200	848	9,134	6,859
Gaston	415	64,675	.....	64,675	5,425	.....	5,425	250	.....	250	18,660	13,997
Granville	277	21,930	25,000	46,930	1,211	1,000	2,211	124	400	524	9,771	7,235
Greene	96	5,546	.....	5,546	.....	.....	.....	....	.....	.....	1,100	825
Guilford	260	84,645	61,600	146,245	475	300	775	63	500	563	39,348	28,666
Halifax	724	42,468	20,000	62,468	.....	800	800	....	500	500	13,420	10,570
Harnett	126	11,252	25,000	36,252	653	3,000	3,653	32	200	232	8,398	6,298
Haywood	129	25,138	24,320	49,458	22,000	22,000	44,000	.....	20,000	20,000	22,089	16,464
Henderson	201	14,825	12,000	26,825	225	15,000	15,225	75	900	975	9,507	7,140
Hertford	200	10,402	10,412	20,814	.....	25	25	....	80	80	7,326	4,207
Hoke	124	1,426	38,702	40,128	.....	2,167	2,167	....	1,452	1,452	8,820	6,629
Hyde*	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
Iredell	188	51,271	.....	51,271	.....	.....	.....	....	.....	.....	15,329	11,496
Jackson*	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....
Johnston	392	33,483	547,000	580,483	1,848	4,340	6,188	160	5,230	5,390	120,744	91,612

Jones	147	9,125	5,000	14,125	.....	.....	.....	50	50	100	4,051	3,039
Lee	157	10,464	.....	10,464	400	.....	400	....	.....	.....	2,426	1,820
Lenoir	190	9,796	.....	9,796	.....	.....	.....	....	.....	.....	2,635	1,976
Lincoln	202	84,400	50,000	134,400	1,000	4,500	5,500	....	100	100	41,117	30,841
Macon	190	40,215	12,000	52,215	1,117	5,000	6,117	74	2,250	2,324	11,687	8,687
Martin	111	4,000	5,000	9,000	20	15	35	....	25	25	2,451	1,834
Mecklenburg	351	71,626	225,000	296,626	.....	15,000	15,000	....	.....	.....	72,935	54,701
Montgomery	150	32,851	25,000	57,851	.....	2,160	2,160	....	500	500	14,600	10,955
Moore	336	117,895	150,000	267,895	1,400	3,000	4,400	250	5,000	5,250	88,579	68,002
Nash	262	27,090	75,000	102,090	.....	1,000	1,000	....	100	100	24,622	17,468
New Hanover	162	24,600	.....	24,600	43	2,167	2,210	....	1,452	1,452	10,956	8,232
Northampton	300	52,825	60,000	112,825	.....	.....	.....	63	63	126	23,724	17,251
Onslow	78	5,854	400	6,254	285	75	360	90	15	105	1,736	1,304
Orange	257	51,600	38,702	90,302	.....	2,167	2,167	14	1,452	1,452	22,498	16,841
Pamlico	170	25,028	5,000	30,028	150	.....	150	64	.....	64	9,032	6,774
Pasquotank	369	45,322	.....	45,322	220	.....	220	100	.....	100	15,563	11,688
Pender	18	21,349	20,000	41,349	50	150	200	....	25	25	9,863	7,399
Perquimans	33	5,024	.....	5,024	.....	420	420	35	155	190	1,749	1,327
Person	257	14,739	38,702	43,441	450	2,167	2,617	....	1,452	1,452	13,631	10,233
Pitt	187	279,927	105,120	385,047	1,635	1,635	3,270	113	904	1,017	83,579	62,675
Richmond	105	38,892	7,769	46,661	500	.....	500	50	.....	50	10,075	7,541
Robeson	463	17,165	12,000	29,165	945	250	1,195	119	50	169	7,735	5,786
Rockingham	80	20,714	600	21,314	.....	.....	.....	....	20	20	4,133	3,882
Rowan	191	32,354	100,000	132,354	.....	500	500	....	8,000	8,000	30,362	22,853
Rutherford	168	9,202	4,000	13,202	.....	6,000	6,000	....	175	175	3,617	2,714
Sampson	344	40,576	1,000	41,576	.....	.....	.....	....	25	25	9,353	7,015
Stanly	53	14,830	10,000	24,830	143	200	343	....	10	10	5,520	4,118
Surry	124	41,865	38,702	80,567	5,128	2,167	7,295	22	1,452	1,474	24,035	18,040
Swain	54	550	3,500	4,050	.....	1,500	1,500	....	.....	.....	1,108	831
Union	240	67,613	13,025	80,638	400	6,000	6,400	256	8,000	8,256	30,681	23,296
Vance	257	76,742	38,702	115,444	610	2,167	2,777	19	1,452	1,471	28,427	21,334
Wake	250	47,342	38,000	85,342	1,110	2,000	3,110	554	1,452	2,006	21,037	15,848
Warren	48	7,680	1,250	8,930	365	.....	365	25	10	35	2,677	2,005
Washington	600	29,988	4,500	34,488	4,000	300	4,300	298	750	1,048	12,412	9,321
Wayne	392	27,247	.....	27,247	37	.....	37	2	.....	2	6,209	4,657
Wilkes	470	63,675	10,000	73,675	1,550	11,000	12,550	62	10,000	10,062	17,545	13,257
Wilson	287	38,800	250,000	288,800	.....	15,000	15,000	....	15,000	15,000	65,612	49,359
Total	16,663	2,702,457	2,683,463	5,385,928	78,155	150,748	228,903	4,772	101,633	106,405	$1,374,690	$1,032,556

*No report.

REPORT OF BOYS' AGRICULTURAL CLUBS

To the Director:

The results obtained from reports of county agents, upon whom the responsibility of securing club records for the year 1918 was placed, do not at all indicate the results by the boys and girls who joined the club work during the year. Early in the spring of 1918 a special appeal was made to the children of North Carolina to do their part toward winning the war and feeding the world, by enrolling largely in the various club activities. The Governor of the State was called upon to use his influence in this direction and sent out a special appeal for a large army of food producers.

At the annual meeting of the county farm demonstration agents, held in Raleigh in February, one whole day was given over to the discussion of club work and an unusual interest was shown on the part of the agents in the development of club work. They voluntarily passed a resolution pledging themselves to a one hundred per cent increase in enrollment. The county superintendents of education and teachers all joined in the campaign and as a result we were able to enroll more than twenty thousand boys and girls in the various club activities.

Although the demoralizing influences that obtained during the fall, at the time we were called upon to secure club records, materially reduced the opportunities for securing these records yet it is known that a large per cent of these twenty thousand members grew the crop or produced the animals. Because of the ravages of the influenza epidemic, most of the schools were closed and the serious results to many thousands of families, incident thereto, caused the children to lose interest in the making of reports, and the agents were so extensively called upon to serve in various ways for the alleviation of suffering that they could not devote the time to the getting up of records, as in former years. As a result our reports are very meagre and unsatisfactory.

Organization

Not only did the influences referred to above materially retard our club activities, but the calling of Mr. William Kerr Scott to the Army at the very time when his services were most needed, and the resignation of Mr. A. K. Robertson to go into county agent work, practically eliminated the possibility of personal visits to the counties in the interest of plant club promotion, the State Club agent being able to do little more than look after the organization and administration of the work.

The pig and poultry club work have retained practically the same organization as previously, with the addition of Mr. E. G. Warden as assistant to Mr. A. G. Oliver, in the promotion of poultry clubs, and Mr. J. C. Anthony as assistant to Mr. Moses in swine extension work. Mr. W. W. Shay, of Cruso, has been added to this division as a permanent worker, to devote his time to the swine extension work among both adults and children.

Because of the reduced office force our ambition for an extension of the community club idea has not been realized. However, with the coming of the year 1919 the plan of reorganization contemplates a devotion of larger energies to the development of the community club plan and Mr. H. H. B.

Mask, who comes into the service as assistant State agent in farm demonstration work, with extensive experience in the development of the community club idea, will prove invaluable in the putting into effect this plan. It is the positive conviction of those in charge that with the extensive development of club work and the enlarged duties of county agents, the ultimate success of this activity is dependent upon a thorough development of the organized community club, so that the county agents, upon whom the organization of club work is to be placed, can supervise and direct the club work in these organized groups, rather than attempting to do it with individual members. Not only will the organized community club plan greatly reduce the demands upon the county agents' time, but it has the additional benefit of developing the community idea among the children and parents, developing leaders for other community activities and forming the permanent community unit, through which our extension activities may be directed.

Fig. 8. Club Members Attending Short Course at State College, August, 1917

Club Activities

During the year the same club activities as heretofore have been fostered, namely, corn, pig, poultry, peanut, potato, wheat, cotton and soybean clubs, with probably the greater interest developing in the pig and poultry club work. We had some very valuable results in the wheat club. The enrollment in the cotton club has not been as large as the high price of cotton would seem to warrant, and yet we have two records which far exceed in importance any heretofore obtained by cotton club members. Lowell Martin, of Cleveland County, produced on his acre 1,014 pounds of lint cotton, from which he realized a clear profit of $333.96. A cotton club member in Hertford County produced 1,280 pounds of lint cotton, from which he realized a clear profit of $370.63. We also had a yield of corn on one club acre considerably over 200 bushels, but because the father fed some of the corn before it could be authoritatively measured we are not able to verify these figures.

Meetings

During the summer there were held in various counties quite a number of club short courses and get-together meetings, in which there was unusual interest displayed, culminating in the Boys' Short Course held at the State College of Agriculture and Engineering, during August, at which were present 387 members of the agricultural clubs. The number of club members in attendance upon this short course necessarily had to be limited because of reduced dormitory facilities, incident to the class of technicians, which the Army had in training at the College.

The club members during the short course were organized in groups, with county agents in charge of the various groups and county agents and other extension specialists teaching them. Mr. A. K. Robertson and Mr. W. Kerr Scott had charge of the organization and discipline, which was handled with great credit to the institution. This annual gathering of club members has proven one of the valuable and inspiring occasions during each summer.

The number of club round-ups and exhibits at county and community fairs was reduced to almost nothing, because of the epidemic of influenza, as practically all of these fairs, including the State Fair, were canceled. This very fact operated quite seriously against the securing of reports and records, as the community and county fairs have proven most auspicious occasions for encouraging the boys to report and for securing the proper data for the records.

The attached statistical data and reports on the different phases of club work show for themselves.

STATISTICAL REPORT OF BOYS' CLUB WORK

By T. E. BROWNE, State Agent

CLUB MEMBERS REPORTING

PLANT CLUBS

	Enrolled	Reporting	Bushels or Pounds	Cost per Bushel or Pound	Value	Profit	Boys making Over 100 Bushels Per Acre
Peanuts	225	34	17,600	51	$26,400	$ 6,636.48	.....
Potatoes	574	112	2,808½	48½	5,616	1,361.00	.....
Grain Sorghum	....	...	.....	....	.....	.....	.....
Wheat	245	113	1,824	84	4,104	2,571.84	.....
Oats	....	...	.....	....	.....	.....	.....
Peas	....	...	.....	....	.....	.....	.....
Beans	....	...	.....	....	.....	.....	.....
Corn	2,060	731	35,664	55.5	51,500.26	31,736.74	5
Cotton	133	31	20,463	15.3	5,115.75	1,984.92	.....

Animal Clubs

	Enrolled	Reporting	Number of Animals	Pounds	Cost per Pound	Value	Increase in Value
Pigs	4,507	783	....	.....	.....	.....	.....
Fattening dem..	.....	...	702	131,023	.....	$23,581.34	$77,720.29
Breeding dem...	.....	...	1,309	171,431	.....	80,292.86	.....
Poultry dem....	4,648	923	9,230	.....	.....	18,460.00	.....

CLUB MEMBERS NOT REPORTING

Estimated production made by club members failing to send in their reports for the calendar year 1918.

Plant Clubs

	Enrolled	Bushels	Value
Corn	1,300	49,332	$78,466.20
Peanuts	107	15,612	22,312.00
Potatoes	382	10,904	21,808.00
Wheat	147	2,203	4,956.00
Cotton	112	64,175	16,043.00

REPORT ON PIG CLUBS

By J. E. Moses, Agent in Charge

Pig Club work for the year 1918 has been conducted along similar lines as in preceding years. The work has been done entirely in cooperation with the county agents, the main responsibility for enrollment and keeping up interest falling upon them. The office of Pig Clubs has also been responsible for general swine promotion work among adults in addition to the Pig Club work.

As a result of the unusual demands for increased pork production not only has the amount of club work been materially increased but unusual progress has been made in the swine industry of the State in general. During the year three sales of registered Poland-China hogs were held in the State. In addition to these sales fourteen carloads of hogs have been shipped into the State to be used, some for breeding purposes and some for meat. Ten carloads of hogs were transferred from counties having a surplus into territory where a scarcity existed.

Pigs for club members have been shipped into the State in considerable quantities, but no figures are available to show the exact or approximate number.

Projects

The Pig Club work in 1918 has been carried on under three principal projects:

1. The meat project in which the member grew one pig, grade or purebred, to be killed in the fall or winter for meat.

2. The breeding project in which the club member grew a purebred pig, either boar or sow, to be used as a breeding animal.

3. The sow and litter project, in which the club member bred a sow and raised the resulting litter according to club plans and instructions.

The majority of the work done came under the second or breeding project.

In addition to this project work the school pig idea has been fostered as a means of arousing greater interest in the Pig Club work among the school children, and at the same time stimulating a greater interest among adults in the growing of purebred hogs. There has been considerable response to the suggestions in regard to this phase of the work, but no reports have been received to indicate the actual number of school pigs that are in existence. The number is probably small as the epidemic of influenza caused most of the schools to be closed during the fall and winter months.

The meat-curing project which was the principal phase of the 1917 to 1918 winter work was finished up in February with very satisfactory results. The number of members entering this contest was small, but the meat cured

FIG. 9. CLUB MEMBERS AND AGENTS AT GENERAL MEETING DURING SHORT COURSES

and shown at the close of the contest was excellent. This project was not undertaken again on account of the epidemic of influenza which interfered materially with our field work. The workers of the Pig Club and Swine Extension Force have given a number of hog butchering and cutting demonstrations for the promotion of home curing of meat.

Prizes

No general State prizes have been offered in the Pig Club work this year. Those that were offered have been by county units. Practically all fairs of the State have offered special prizes to Pig Club members, but on account of the influenza epidemic few fairs were held this year. The various swine record associations have offered special prizes to be awarded to club members at the leading fairs, but these could not be taken this year on account of the fairs being called off.

Financial Aid to Club Members

The amount of financial aid extended to club members by banks and other institutions has increased considerably over what it has been in any preceding year. Practically all of the banks of the State have indicated not only a willingness to lend money to club members, but a desire to do so. A number of letters have been received from bankers who have loaned money to club members, expressing their delight in the transaction both from a business point of view and as an advertising proposition.

Statistical Report of Pig Club Work

Total enrollment, 4,507.
Number reporting, 783.
Per cent of membership reporting, 17.37.

Meat Pig Project—
Number of pigs, 709.
Average initial weight, 31.2 pounds.
Average initial value, $7.64.
Average final weight, 184.8 pounds.
Average final value at 18 cents per pound, $33.26.
Average gain in weight, 153.6.
Average gain in value, $25.62.
Total initial weight, 22,155 pounds.
Total initial value, $5,418.91.
Total final weight, 131,023 pounds.
Total final value, $23,581.34.
Total gain in weight, 108,161 pounds.
Total increase in value, $18,162.43.

Breeding Pig Project—
Number of pigs, 1,193.
Number of sows, 1,017.
Number of boars, 176.
Average initial weight, 26.4 pounds.
Average initial value, $11.25.
Average final weight, 143.7 pounds.
Average final value, $43.58.
Average gain in weight, 117.3 pounds.
Average increase in value, $32.33.
Total initial weight, 31,561 pounds.
Total initial value, $13,420.75.
Total final weight, 171,431 pounds.
Total final value, $51,990.86.
Total gain in weight, 139,870 pounds.
Total increase in value, $38,570.11.

Sow and Litter Project—
Number of sows and litters, 292.
Number of pigs farrowed, 2,441.
Average per litter farrowed, 8.4.
Number of pigs raised, 2,197.

Average per litter raised, 7.5.
Average initial value of sow, $25.05.
Average final value sows and litters, $96.92.
Average increase per sow and litter, 71.87.
Total initial value sows, $7,314.25.
Total final value sows and litters, $28,302.00.
Total increase in value, $20,987.75.

Summary of All Projects

Total initial value of all pigs and sows, $26,153.91.
Total final value of all pigs, sows, and litters, $103,874.20.
These figures are the summary of the county agents' reports. Their reports were based upon the reports from club members, supplemented by their knowledge of the work done in their respective counties.

Summary of Activities of Workers

Number of workers, 3.
Territory (counties), 88.
Lectures given, 525.
Total attendance, 27,000.
Miles traveled, 37,450.
Farms visited (including visits to Pig Club members), 1,084.
Pig Club enrollment, 1918, 4,507.
Official letters written 2,505.
Circular letters written, 26.
Extension circulars prepared, 1.
Pastures prepared, 2.
Farmers' Bulletins and Extension Circulars distributed, 21,000.
Articles prepared for publication, 50.
Swine promotion sales held in State, 3.

REPORT OF POULTRY CLUB WORK

By A. G. OLIVER, Poultry Club Agent

The necessity of producing more and better poultry has been emphasized very strongly throughout the State, and especially with the boys and girls who live on farms. They have been shown by practical methods how their flocks would economically produce the most meat and eggs.

A campaign was waged in the winter and early spring for early hatching to produce a good crop of early pullets, which are the fall and winter layers. By doing this there is had also a lot of early cockerels to put on the market when prices were best, thus saving feed. The pullets will do better, grow to maturity in shorter time, and return the value of the feed consumed in eggs produced.

Later in the spring and summer a drive was made to dispose of old hens, keeping only the best, and urging all to dispose of the old cock birds after hatching season. All of this work was kept before the club members by circular letters and seasonable articles in the local papers.

The local leader idea has always been strongly emphasized, as this kind of

organization multiplies the object of this office by just as many times as good local leaders can be trained. In order to accomplish this close attention instructions have been given to all the agents, both men and women, especially where the work was on the intensive plan. They have also been instructed as to the care and handling of farm poultry, judging and comparing the birds both for utility purposes and for prize winners. Besides this these leaders have been carefully instructed in the details essential to farm poultry equipment, such as the construction of poultry houses, brood coops, feed hoppers, and drinking founts.

Fig. 10. Demonstration in Judging and Handling Poultry

To make each agent as efficient as possible each of their offices have been supplied with models, standards of perfection, pictures, charts, bulletins and other material. Subject matter has been furnished them, and, in most instances, circular letters signed by the agents have been sent out, thereby following up the local leader idea.

The results from this method have been most gratifying and have proven a big asset in greatly increasing the production of purebred farm poultry.

Demonstrations were given over the State showing the methods used to preserve eggs in water glass. This one thing was worth thousands of dollars to the homes, and thousands of eggs were conserved for winter use.

For the past three years there has been a steady improvement, and the enrollment this year is 3,648 white members and 1,221 colored members, making a total of 4,869 members. This increase in membership shows that the boys and girls on the farms are going after the work.

The same instructions, subject-matter and help that were given to the white members have been given to the negroes, and they have in turn made very good progress.

Poultry Club Exhibits at District Fairs

Greensboro Fair—
- Number birds shown, 102.
- Number eggs shown (doz.), 14.
- Number members exhibiting, 51.
- Cash won, $41.75.

Anson County—
- Number birds shown, 298.
- Number eggs shown (doz.), 8.
- Number members exhibiting, 29.
- Cash won, $46.50.

State Fair—
- Number birds shown, 172.
- Number eggs shown (doz.), 67.
- Members exhibiting, 73.
- Cash won, $186.
- Awards in open class, $23.

Recapitulation—
- Total number birds shown, 804.
- Total number dozen eggs, 126.
- Total cash won, $467.25.
- Cash won at Wilson Poultry Show, $68.
- Two silver cups also awarded.

Poultry Club Exhibits at Community Fairs

- Total number birds shown, 216.
- Total number eggs shown (doz.), 144.
- Total cash won, $99.

Statistical Summary of Poultry Club Work

- Number counties organized, 43.
- Number clubs, 166.
- Members (white), girls, 2,200; boys, 1,448.
- Colored enrollment—Boys and girls, 1,221.

Organization—
- Number counties visited, 43; points visited, 200.
- Number club members' homes visited, 757.
- Other poultry visits (farms, dealers, etc.), 432.
- Letters written, 1,321; circular letters issued, 5.
- News articles published, 19.
- Club meetings held, 113; attendance—members, 2,432; others, 5,650; total, 8,082.
- Other meetings held, 14; attendance, 1,589.
- Lectures delivered, 201.
- Demonstrations given, 211; attendance, 15,329.
- Short courses conducted, 2.
- Conferences attended, 49.
- Miles traveled—rail, 7,540; auto or team, 4,139.

Results—
Number members reporting—Girls, 843; boys, 419.
Eggs set, 94,760.
Chickens hatched, 75,789.
Chicks raised, 53,708.
Compositions submitted—First year, second year, third year, fourth year.
Number exhibits held, 8.
Number fowls shown, 369.
Number dozen eggs exhibited, 48.
Members exhibiting, 90.
Value of prizes—Cash, $115; special, 2 cups.
Poultry houses planned or remodeled, 302.

Business Account—

Fowls sold, 2,776, at $1.25; value	$ 34,705.00	
Eggs sold and used at home (104 each member) 13,248 doz., at 35c.; value	45,936.80	
Fowls on hand November 1st, 25,240, at $3	75,720.00	
Houses built	302	
Coops built	540	
Value of houses and coops built	9,060.00	
Prizes won (value)	115.00	
Miscellaneous receipts, 250 breeding birds (value)	1,000.00	
Total receipts		$166,536.80
Poultry houses and coops built (cost)	$ 6,040.00	
Eggs for hatching (cost)	3,786.00	
Breeding stock (cost)	200.00	
Feed bought or used from home growers	26,502.00	
Total cost		36,528.00
Profit		$130,008.80

General Work and Results—
Educational exhibits, 21.
Social features—Picnics, 11; rallies, 11.
Special reports of outstanding members—Girls, 21; boys, 9.
Photographs, 200.
Communities standardized, 32.
Production campaigns, 43.
Hatch early campaigns, 43.
Educational campaigns, 21.
Infertile campaigns, 43.
Water glass campaigns, 43.

REPORT OF NEGRO CLUB WORK

By JNO. D. WRAY, Farm Makers' Club Agent

This has been the most trying year since the beginning of this work. There have been many things to interfere, some of which were equally, if not more, important than the clubwork, and by order of the Director, received about the same attention. Personal touch is the thing that counts, but the pressure brought to bear in support of the various campaigns, such as Liberty Bonds, War Savings Stamps, Red Cross, United War Work, and the fighting of German propaganda, prevented us from devoting as much time as we wished to the clubs' work.

When the atmosphere cleared up from the above work, influenza became epidemic, and absolutely tied up everything for three months. All the fairs were canceled, traveling was deemed inadvisable because the people feared the presence of a stranger, more especially those from quarantined cities. The county, as well as State agents, were handicapped in this respect. Many of the club members suffered with the above disease, some fatally. Many of those who escaped were impaired for work and could not gather their crops. Therefore, we had to depend, for the most part, upon estimation. The estimations made by the various rural supervisors and county agents show the highest per cent of active club members since the work was introduced. The children are really patriotic and have tried to do their part. It has been a task to answer their letters because they came so frequently and in such large numbers.

On account of influenza, as indicated above, we have not any reports that we consider complete, so we only have two classes, those who reported and the estimations made by the various extension agents.

We also had quite a success with "Uncle Sam's Saturday Service League," whose members pledged themselves to work Saturday afternoons until the war was over, but in view of the great food problem facing the country these little patriots have continued their work and are soliciting new members and sending me their names daily. There are up to date 4,750 members.

We have also conducted a competitive garden scheme, in cooperation with the secretary of The College Volunteer Workers in twelve of the leading cities of the State. Results are as follows: 23,020 families reported 17,120 gardens, 9,090 of which were good. They also reported an addition of 7,305 winter gardens, making a grand total of summer and winter gardens numbering 24,475. This took very little of our time, for which we got splendid results.

The results of our year's work are as follows: Consultations, 2,685; letters written, 3,527; cards distributed, 16,744; circular letters, 30,792; bulletins, 35,621; visits to demonstrators, 32; to club members, 839; to home demonstrators, 50; to farmers, 979; to schools, 82; meetings held, 88; estimated attendance, 21,694; miles traveled (by rail) 8,710, (by auto), 907, (by team) 1,304.

The report of the various clubs is as follows:

Total number of eggs set	8,540	
Eggs hatched	5,487	
Chickens raised, 4,743; average value, $1 each		$ 4,743.00
Total number of eggs eaten and sold, 158 dozen, @ 60c		557.90
Estimated poultry raised, 12,320; average value $1 each		12.320.00

Estimated number of eggs, 20,240 (sold and eaten) @ 60c	$ 1,012.00
One cow and calf, valued at	135.00
Pork produced, 23,315 pounds, @ 25c	5,828.75
Breeders on hand, 56; value	1,190.80
Pigs on hand, 192, @ $10 each	1,920.00
Wheat produced, 736 bushels, @ $2.20 per bushel	1,617.00
Peas produced, 408½ bushels, @ $3.00 per bushel	1,428.00
Potatoes produced, 697 bushels @ $2.00 per bushel	1,394.00
Peanuts produced, 1,805 pounds, @ 12½c	2,240.62
Cotton produced, 32½ bales	8,025.00
Corn produced, 19,453 bushels, @ $2.00	38,906.00
Estimated corn, 36,000 bushels, @ $2.00	72,000.00
Grand total of products produced	$178,061.07

Number of poultry club members reporting	307
Number of estimated club members reporting	880
Number of calf club members reporting	1
Number of pig club members reporting	109
Number of wheat club members reporting	35
Number of cowpea club members reporting	6
Number of potato club members reporting	11
Number of peanut club members reporting	26
Number of cotton club members reporting	13
Number of corn club members reporting	152
Number estimated in corn clubs	1,200
Total number enrolled	8,204
Total number reporting	2,740

Because of the inaccuracy of reports and estimates the cost could not be well determined. There were so few properly made reports that I felt it unnecessary to classify them. They showed, however, that the products were grown reasonably cheap. The average yield of corn for the entire State is 63 bushels per acre. We did not have any high yields this year, as usual, but the highest average yield since the work began. The yields were generally from 40 to 80 bushels, no one reporting as much as 100 bushels.

Respectfully submitted,

T. E. BROWNE,
State Club Agent.

REPORT OF THE DIVISION OF AGRONOMY

To the Director:

The main work in extension of the Division during the past year has been along the same general lines as reported in previous years. In a general way the activities have been mainly in soil fertility, with legumes, with sugar plants, and in community improvement of farm crops.

Soil Fertility

The entire time of one man, and part of the time of three others, has been devoted to the carrying of information secured in our experimental work to farmers on their own farms, or indirectly to them through county agents and in other ways.

In the experimental work in soil fertility it has been found in a general way that the main plant food deficiency in many of the leading soil types of the State is different. In carrying this information to farmers care has been exercised to see, as far as possible, that the information is specific. In order to be able to do this it has been necessary to know the type or character of the soil prevailing on the farm of the farmer seeking information. It is believed that thousands of dollars have been saved farmers by their accepting advice given with reference to the needs of their soils, and how best to meet these. In a general way it has been the plan of the Agronomy Division to have the man carrying the information to spend something like a week in the county, with the county agent most of the time, out in the fields. Meetings in different parts of the county are arranged previously by the county agent, and between the meetings the Extension Specialist in Agronomy and the county agent spend their time visiting farms of farmers who are seeking special information with reference to the needs of their soils. The specialist is provided with a simple and suitable apparatus for testing the sourness of the soil on the spot. There has been a great demand for this kind of work from farmers. In many cases the specialist has found that the soils in many localities were so sour that crops could not possibly make their most satisfactory growth on them; it mattered not how well the crops were put in and cultivated.

The specialist is provided with definite information with reference to the kind of lime, freight rates, prices, etc., so that he can advise prospective buyers of lime as to where they can get their supply of this material at most satisfactory prices. In connection with this work, demonstrations designed to show the plant food needs of the soils have been put out on the farms of eleven of the Farm-life Schools of the State. These demonstrations have been very helpful to the teachers of agriculture in these schools, not only in their class work, but also as a means of reaching their patrons in an effective way; especially those who were disposed to belittle the work in agriculture in connection with these schools.

Work With Legumes

Much effort has been exerted to induce the farmers of the State to grow more suitable legumes. Chief attention has been given, up to this time, to the encouraging of the growth of soybeans, cowpeas, velvet beans, vetches

and clovers. Not only has the growth of these been encouraged, but definite information has been supplied with reference to the kind of seed suitable for different conditions, and farmers have been advised as to where these may be secured at most satisfactory prices, considering quality.

During the past two or three years much effort has been devoted to the growth of more soybeans, as it has been found that of all the summer-growing legumes this is by far better adapted to the conditions prevailing in the State than are any of the others. This encouragement has been followed by an increase of something like 20 to 25 per cent in the acreage last year in the State, and an equal increase this year over the crop of 1916. In many counties of the State where this crop was practically unknown three years ago there was planted from a thousand to eighteen thousand acres this past spring. County agents have been very ready to see the great value of this crop to the agriculture of the different sections of the State, and have, in most cases, pushed its growth vigorously.

In the mountain section of the State soybeans have shown themselves generally to be much superior to cowpeas, which were practically the only summer-growing legume that was grown by the farmers a few years ago in that portion of the State.

Sugar Plant Work

During the past spring cooperative arrangements were entered into with the office of Sugar Plant Investigations of the U. S. Department of Agriculture for carrying on sugar plant work in this State. This was an entirely new field of work, with no beaten paths to tread or precedents to guide. North Carolina was one of the first states, as far as we are aware, to put a man in the field to encourage a greater production of sugar and syrup. This was done in order to relieve, as far as possible, the shortage of "sweets" brought about by the war conditions. A special effort has been made to revive the greater production of sugar and syrup from the sugar maple trees of the mountain region, which was at one time an industry of considerable importance. Other sugar plants whose growth has been encouraged have been sorghum and sugar cane in sections where this latter crop can be grown satisfactorily. Sugar cane is now being grown in some six or seven southeastern counties of the State.

Sugar beet seed were distributed to a goodly number of farmers in some of the mountain counties, with the hope that probably they would be found after growth to contain a sufficiently high content of sugar to justify the manufacturing of sugar. The work with each of these crops has been carried out as follows:

Sugar Beets—Early last spring, through the cooperation of the U. S. Department of Agriculture, a small quantity of select sugar beet seed were sent to about 125 farmers in Avery and Watauga counties. Later Mr. Hensel, the field agent in this work, distributed further quantities of seed of this crop to farmers in these and neighboring counties. In all some three hundred farmers in Ashe, Avery, Watauga, Mitchell, Yancey, McDowell, Buncombe, and Burke counties were supplied. Each person to whom seed were sent was furnished, either by the field agent directly or by request, instructions for growing this crop and for making the syrup from the beets when grown. As far as it was possible to do so the field agent visited the cooperators for the purpose of giving, in person, instructions as to the grow-

ing and handling of the crop. From selected locations beets will be sent in to the chemical laboratory for a determination of their sugar content. From the nature of the soil and the kind of climate in the section in which most of the seed were distributed, as well as from a later examination of the beets grown, the field agent anticipates that most of the beets will have a high sugar content. At the time of preparing this report, however, it is too early to secure definite information with reference to this, or the syrup producing value of these plantings of sugar beets. It has been planned to extend the trials of these beets to other mountain counties during the coming year, if the content of sugar seems to justify such action. It is felt that the sections south and west of Asheville may have soils and climatic conditions favorable to the growth of this crop.

Sugar Maple—During July and August the field agent spent considerable time in the counties of Ashe, Avery, Watauga, Mitchell, and Yancey, taking a partial census of the sugar maple trees in these counties. He found a number of fine tracts of sugar maples that were easily accessible for sugar and syrup-making purposes. He listed the names of 120 owners of sugar maple trees, and estimated the number of trees owned by each. The largest areas of these trees yet remaining in the State are in the counties of Ashe, Avery and Watauga. He urged the owners that it was their patriotic duty to utilize their trees next spring for syrup and sugar-making purposes. He received considerable encouragement, but is inclined to think that it will take almost constant urging to secure best results. Very little sugar and maple syrup have been made in that section in recent years. From all information available at the present time it would certainly seem safe to estimate that there are still in the mountains of North Carolina not less than 750,000 maple trees that are available for syrup and sugar making. This number of trees, it is estimated, should give on the average an annual production of not less than 3,750,000 pounds of sugar which, at 30 cents a pound, is a very low price for syrup now with prevailing prices, an annual revenue of $1,125,000 to the citizens of that section. All of this would be made in eight weeks, or from about February first to April first, the length of time depending on the seasonal conditions, and coming at the time of year when farm work is practically at a standstill in that section. The maple trees at present are rapidly being cut for lumber, and unless something is done soon to prevent their ruthless destruction there will be no extensive areas left of trees large enough for sugar-making purposes. Lumbermen are paying from $1.50 to $3.00 per 1,000 feet for these trees on the stump, which would probably not average more than twenty-five cents to one dollar per tree. At this price each tree should net the owner each year, if properly operated in sugar and syrup-making, the highest price received for any tree, and he would still have the trees left. The owners' attention has been called to these facts and it is hoped that there will be a marked decrease in the destruction of the sugar maples in that section.

It is believed that it will be wise to have legislation by the State and by the Federal Government looking toward the preservation of these areas of sugar maple trees that still exist, and also to encourage the planting and culture of others in places where the trees are native. They are potentially too valuable a source of food supply and revenue to permit of their being so ruthlessly destroyed, as has been the case in some localities. It is doubtful

if any other "sweets" can compare with maple sugar and syrup in richness and delicacy of flavor when they are properly made.

Sorghum—The work in the State was gotten under way too late to give as much attention to an increased production of this crop this year as was wished. It is believed, however, that there was a material increase in the acreage, and that more sorghum syrup will be made in the State this year than has been in many years previously. Most of the sorghum is produced in small patches for home use. From best obtainable information the yields in the State seem to be from about 75 gallons per acre, in some of the northeastern counties, to nearly 300 gallons in the northwestern Piedmont section. It is believed that the average will not be, however, more than about 125 gallons per acre. There is no question but what this yield can be materially increased by better cultivation; by the use of better seed; by harvesting the

Fig. 11. A Field of North Carolina Sorghum

crop at the proper stage of development; and by the development of better extraction of the juice. Farmers, generally, are not able to tell the name of the variety they are growing. Some of them are growing varieties or strains that produce much less juice of low sugar content than could be secured, if better selected varieties were used. It is a well known fact that nearly all varieties of sorghum are partial to some particular kind of soil and climate. In some soils a given variety will be much richer in both sugar and juice contents than would other varieties planted under the same conditions. In order to determine what varieties are best suited for different sections of the State, it is planned to carry on next year some variety tests with this crop. It is planned in these tests to determine what effect the different soils may have upon the color of the syrup. The general idea among experienced sorghum growers and makers is that dark and heavy clay soils produce much darker syrup than do the lighter colored sandy soils. In the study of varieties it is planned to get definite information with reference to these and other points of economic importance. Much time has been given to the encourage-

ment of the use of better methods of making the syrup from the cane. It has been found that the poor products secured are due, in most cases, to the crude methods of manufacture. It is planned for the coming year to especially emphasize the importance of an increased production of this crop.

Sugar Cane—In the counties of Bladen, Pender, Robeson, Columbus, Brunswick, and possibly some others in that section of the State, many farmers are growing small quantities of sugar cane. They report yields varying from 400 to 600 gallons of syrup to the acre. The product produced generally seems to be of superior quality and flavor.

Community Seed Improvement

In order to improve the yield of cotton grown in North Carolina the Agronomy Division of the Extension Service has aided in the establishment of community cotton centers. By this it is meant that one good variety of cotton is selected for each community and kept in the community by saving

FIG. 12. DEMONSTRATION IN GROWING BUCKWHEAT IN WESTERN NORTH CAROLINA

the seed for planting purposes by right methods. Such work should materially result in the improvement of the yield and qualtiy of the cotton, lessening the danger of mixing at the gin, and rendering the community more independent of local markets. The community improvement work is conducted mainly in cooperation with county agents, and with growers of the different communities. At the beginning of the work in the communities the growers agreed to choose one variety of cotton for the community and the Extension Service agreed to help in making the choice and in further improving the variety in something like three to five varieties from the farms of growers, with an equal number recommended by the Extension Service. From the result of the test the growers decide upon the variety that is to be grown and improved in the community. Since the work was begun in 1914 twenty communities in eleven counties have been aided. In

all cases, except one, the community has been supplied with a better variety of cotton. The new varieties have produced, in the different localities, an average increase in yield to the value of $10 to $30 more per acre than the varieties previously grown in the communities. Thirteen to twenty communities are now growing varieties of cotton recommended by the Agronomy Division of the Extension Service. Four are planting row-selections and seven others have made application for selecting their plants this fall.

In addition to the cotton field improvement work efforts are being made to improve the market conditions. The office of Markets is cooperating in this work by grading the community cotton, and in locating markets for special grades of cotton. A register is kept of growers who produce well bred seed, and a special effort is being made to create a local demand for improved seed. When a grower fails to select his seed, or allows them to become mixed, his seed are no longer recommended. In most communities the ginners have given hearty cooperation in this work. In a few cases certain ginners have refused to gin cotton other than that chosen by the community, while others have set aside special days for ginning community cotton.

The community improvement work was extended during the past season to ten communities. In each of these variety tests were made which included three varieties recommended by the Division of Agronomy. These were compared with varieties commonly grown in the different localities. With the exception of one community the improved varieties recommended have produced the largest returns per acre. In the ten tests the recommended varieties have produced an average income of $26 per acre more than the varieties usually grown in the communities. Five communities have adopted one of the improved varieties and are now making selections from the best plants to further improve the variety chosen.

The Crisp community, near Macclesfield, has grown plant-to-row breeding patches during the past two years, and now has a superior strain of Cook for increasing in the community.

At Manchester, in Cumberland County, the Lone Star variety of cotton, introduced two years ago, is growing in favor. Mr. R. W. Christian, with whom the main portion of the work in this county has been conducted, is carefully and intelligently selecting good plants to further improve his strain.

Around Scotland Neck and Norfleet, in Halifax County, a strain of Cleveland Big Boll, introduced two years ago, has been growing in favor for the lighter and better drained soils.

The strain of Cleveland Big Boll, introduced at Vanceboro and New Bern two years ago, is still giving good results and is now being selected at the Farm-life School at Vanceboro on the farm of J. C. Dougherty, New Bern.

Respectfully submitted,

C. B. WILLIAMS,
Chief, Division of Agronomy.

REPORT OF ANIMAL INDUSTRY DIVISION

To the Director:

Heretofore I have in my annual report reviewed in more or less detail the outstanding phases of animal industry work. This year, however, I intend to give only mere statements of projects. If you desire a full report of any particular phase it will be little trouble for me to place it in your hands, upon request, as the greater part of the work is summarized up to date.

EXTENSION WORK WITH BEEF CATTLE AND SHEEP

R. S. Curtis, in Charge
Assisted by Earl Hostetler, F. T. Peden, J. W. Sloss, J. B. Perry, George Evans, and W. R. Radford

1. Purebred Beef Cattle Sales:

Sales were held at West Jefferson (2), Clyde (2), Wilson, Asheville, Sylva, Spruce Pine, and Franklin. Approximately 300 purebred animals have been offered in these sales.

Fig. 13. A Farm Flock of Sheep in Edgecombe County. Part of a Carload Shipment from the Southwest

2. Feeder Steer Shows and Sales at Clyde Shipping Station:

This is an annual event held under the auspices of the Beef and Cattle and Sheep Office.

3. Texas Cattle Purchases:

About 40 carloads of cattle are being brought into the State from Texas this fall.

4. Silo Building for Beef Cattle Farmers:

Fifteen silos were built under our personal instruction and many more were built as a result of the efforts of the county agents.

5. Young Folks' Judging Contests with Beef Cattle:

These judging contests were held at Wilson, Sylva, Clyde, Brevard, and Charlotte, in connection with the shows and fairs.

6. Beef Cattle Training and Demonstration Schools:

These schools are held in conjunction with the county agents and country schools, lessons being given in judging beef cattle, feeding, feeding for sows, etc.

7. Feeding Demonstrations:

These demonstrations are given in conjunction with farmers, carrying out old Dr. Seaman A. Knapp's idea of feeding demonstrations, the first object being to carry the results of the experimental work accomplished in wintering cattle on grass at the T. L. Gwynn farm, in Haywood County.

8. Placing Purebred Sheep:

Mr. Evans has placed approximately 200 purebred rams and 1,500 breeding ewes in the State.

9. Patriotic Sheep Meetings:

Twenty meetings were held with county agents during the spring of 1918 to arouse interest in the sheep business.

10. Sheep Production Schools:

Mr. Evans has held many of these schools over the State in conjunction with the county agents, making the schools hinge around sheep shearing demonstrations.

11. Dog Control Campaign:

This work is really not connected with the affairs of the Animal Industry Division, except that Mr. Curtis heads the movement. The funds for carrying it forward have been secured by gifts from interested parties.

DAIRY EXTENSION

Alvin J. Reed, in Charge
Assisted by J. A. Arey, F. R. Farnham, D. R. Noland, R. H. Mason, C. D. Sprout, and W. E. Wintermeyer

1. Construction Work:

This phase of work has suffered somewhat during the year on account of war conditions, but many farmers have been assisted in building silos, barns, milk houses, cooling tanks, sterilizers, stanchions, etc.

2. Dairy Schools:

Forty-one dairy schools were held in conjunction with county agents and school teachers, with a total attendance of 3,090.

3. Creamery Improvement:

Mr. Clevenger devotes one-half of his time to the creameries of the State, assisting in building, improving business methods, improving manufacturing methods, scoring butter, etc.

4. Cheese Industry Development:

At the present time there are 25 cheese factories in operation and one more in course of construction. This work is developing satisfactorily and would develop much more rapidly if our extension men had time to give attention to all requests.

5. Herd Improvement:

Our herd improvement work naturally swings around the organization of bull associations and the bringing in of good milk animals. Four hundred and thirty-three head of animals have been purchased for dairy farmers during the year, and four bull associations organized.

FIG. 14. LOADING THE FIRST SOLID CAR OF CHEESE SHIPPED COÖPERATIVELY BY THE CHEESE FACTORIES OF WESTERN NORTH CAROLINA

6. Home Dairying and the Family Cow:

As a war measure some attention has been given to placing good family milk cows with farmers in the eastern and central parts of the State, 150 cows being placed. Much time has also been devoted to teaching the Home Demonstration agents how to manufacture butter, cottage cheese, and other home dairy problems.

7. Official Testing:

Ten herds in the State are doing regular official test work.

8. Experiment Station Creamery:

This creamery is serving a useful purpose to the central part of the State. At the present time it is being remodeled to serve Camp Polk as arrangements are made to furnish the camp with pasteurized milk.

POULTRY EXTENSION

A. G. Oliver, in Charge. Assisted by E. G. Wardin

The objects of the Poultry Club Work are to educate the public as to the food value of poultry and eggs, to encourage business methods in handling farm flocks, to assist in getting farm flocks standardized, to show the good results flowing from the use of good birds, to aid in standardizing the exhibitions at shows and fairs, to assist in finding the best markets for poultry and poultry products, and to carry the latest and best information to the children and farmers as to the results secured in controlling diseases, in feeding and housing their fowls.

The Poultry Club work developed remarkably during the year. The enrollment this year is 3,648 white children and 1,221 colored children, making a total of 4,869. This is something more than twice the membership secured last year.

Fig. 15. The Home Pork Supply. Pigs Being Finished for Slaughter on a North Carolina Farm

PIG CLUBS AND SWINE EXTENSION

J. E. Moses, in Charge
Assisted by W. W. Shay and J. A. Anthony

During the year Mr. Moses was put in charge of the Swine Extension work. He has been assisted a part of the time by Mr. W. W. Shay and Mr. J. A. Anthony, whose salaries and traveling expenses are borne by the Federal Emergency Funds.

The Pig Club work has developed remarkably during the past year, the increase in membership being 126 per cent over the year previous. Last year the total enrollment was 2,015. This year the total enrollment is 4,507. The membership would have been much greater if pigs could have been secured for boys who wanted them. Only four counties have no membership at the present time.

Heretofore the work has been confined to questions of raising and feeding pigs; this year the question of curing meat was stressed with the young folks and many systematic lessons were given.

The Extension work with adults is just being placed upon its feet. One of the first things undertaken was the problem of providing farmers in the State with hogs. This phase of the work is done in cooperation with Mr. Jones of the Marketing Division. Last year 24 cars of hogs were handled in this movement.

LETTERS WRITTEN AND NUMBER OF MEETINGS ATTENDED

This year the members of the Animal Division have answered 22,629 personal letters from farmers in this and other states. The following summary is a close estimate of the number of meetings the members of this Division have attended and the number of people met in public meetings:

OFFICE	Farmers Institutes	DAIRY SCHOOLS	Other Meetings	Total Attendance
Administrative			4	425
Beef Cattle and Sheep	28		192	16,500
Poultry Clubs			194	14,514
Dairy Extension	10	41		3,090
		Creamery Meetings	11	433
		Other meetings	186	13,374
Swine Extension and Pig Clubs	32		486	26,911
Totals	70	41	1,073	75,247

The above statement does not include the number of people met by the members of the division on personal visits upon farms; neither does it include the number of people met at the two largest agricultural meetings of the State, namely, the Annual Livestock Meeting and the Farmers' Round-up Institute at Raleigh.

Respectfully submitted,

DAN T. GRAY,
Chief Animal Industry Division.

REPORT ON ENTOMOLOGY

To the Director:

I submit herewith report of the Extension activities of this Division for the year ending June 30, 1918. The list of the Extension projects of the Division is as follows:

1. Insect control on test farms.
2. Orchard insect control.
3. Beekeeping.
4. General extension entomology.
5. Control of garden and truck crop insects.
6. Hessian fly in wheat.
7. Institutes and other public meetings.
8. Publications.

Work With County Farm Agents

The work on the extension projects is conducted largely with and through the county farm agents. Much correspondence is had with them, and local meetings are held with their cooperation and support. They appeal to us for information in our special line, and this information they spread through their respective counties.

Insect Control on Test Farms

This work is done primarily to keep the orchards on the farms in good health, and to cope with any insect emergency which may arise in other crops. The orchards are regularly sprayed and relieved of borers and other pests, and this sets an example which is being followed by farmers in the vicinity. Thus the farms become an important means of "extension" of knowledge acquired through experimental work and study. This work is now handled chiefly by Mr. J. E. Eckert, Assistant in Inspections and Field Work.

Orchard Insect Control

Special work on control of orchard insects has been possible through the assignment of Mr. J. M. Robinson by the U. S. Bureau of Entomology, who gives half of his time to this State in this work. The larger fruit centers and orchards have been visited, the best methods studied, and the most approved methods of spraying have been taught at every opportunity, both in these sections and in others where the most advanced methods are not already in such common use.

Beekeeping

This work, mentioned in former reports, is being continued by Mr. C. L. Sams, with satisfactory progress. The importance of honey-production has been emphasized by the universal sugar shortage. In the last report Mr. Sherman referred to the organization of the State Beekeepers' Association, looking toward more definite progress. He is now able to report that in the year 1918 the (then) 130 members of the State Association produced (best figures obtainable) over 104 tons of honey. In the same year the eastern county of Martin produced over 35 tons of honey. In the same year, also,

three separate beekeeping enterprises in the State, each produced approximately 10 tons of honey, 30 tons for the three. While these figures may seem large, yet the State is not yet one of large beekeeping operations; while the figures show that beekeeping is a much more important industry in the State than many would suppose, yet there is ample room for expansion, and there are indications that this opportunity will be utilized in future. During 1918 a large number of local meetings of beekeepers have been held, at which the burden of the message has been "better bees, better equipment, and better methods."

General Extension Entomology

This is now provided by the assignment to our division of Mr. W. A. Thomas, Special Agent U. S. Bureau of Entomology, who begins work as the period covered by this report closes. Mr. Thomas is to teach the control of pests on general crops, such as Hessian fly in wheat, potato spraying, weevils in grains, etc., using the findings from the experimental work as a basis for his teaching, supplemented (when needed) by the published results of the work of others.

This is a broad field. The size of this State, and the diversity of crops and conditions in the eastern and western extremes of the State at once suggest that the territory might well be divided, assigning an extension agent to each half, both to make headquarters at Raleigh so as to keep all work harmonized, and allowing the assignment of either to any section in case of need or special emergency. The matter has been studied sufficiently to have a plan in mind, but details are not necessary here. If, during or after the present war emergency any change becomes necessary in our extension activities such rearrangement as here suggested may well be kept in mind.

Control of Garden and Truck Crop Insects

In the autumn of 1917 the U. S. Bureau of Entomology temporarily assigned Mr. H. N. Gellert to give half-time to work in this State under this head. His employment ceased in the spring of 1918, and his work was therefore confined to the winter season. For this reason he was instructed to especially stress the destruction of hibernating insects by the clearing away or burning of trash, rubbish, crop remnants, ditch banks, neglected fence rows, etc. He also advocated potato spraying.

The abandonment of this work in the spring of 1918 leaves this phase of work unattended, or to be done by others, and strongly suggests the plan of permanent general extension work in Entomology by two men in the two halves of the State as already suggested, whereby one man would be assigned more especially to the eastern half of the State where our commercial trucking interests are located.

Hessian Fly in Wheat

This insect has done unusual damage to the wheat crop of 1917-18. Using the map-and-calendar poster issued by the U. S. Department of Agriculture in the summer of 1917, we have begun a campaign to emphasize safe dates for sowing wheat which is under way at the close of the period covered by this report. Mr. Thomas is taking part in this work.

Farmers' Institutes and Other Public Meetings

This division, especially the Entomologist himself, has always taken part in the Farmers' Institutes which are planned by Mr. T. B. Parker, and also in meetings of county farm agents and local meetings of various kinds. Under this head it may be mentioned that the Entomologist has served in the campaigns for the Liberty Loans, having addressed meetings on this topic in several counties, in the second and third loans, with more work of the same kind in prospect.

Publications

Aside from numerous items and short articles in the Extension Farm News, Mr. Leiby and the Entomologist prepared Extension Circular No. 48, "Spraying Irish Potatoes," issued in May, 1917, but not mentioned in the last report, and the Entomologist prepared Extension Circular No. 66, "Orchard Spraying," issued in March, 1918. Both of these have been well received and very widely distributed through county farm agents, and also from the office to special lists of interested persons throughout the State.

Acknowledgments

It is a pleasure to report that all the work of this Division has gone forward without friction. To every one of the several men mentioned in the body of this report thanks are due for the earnestness and ability with which they have prosecuted their duties. Thanks are also due to you as Director for constant support and counsel, and the cooperating officials at Washington.

Conclusion

With the new tasks which the war has imposed in all lines of public work there has arisen special need for emphasis upon every safe and sane practice which stimulates food production. Every one of the projects of work by this Division is laid out with this in view. With the changes that will arise incident to the conflict, and in the readjustments to follow afterwards, it is our sincere hope that the machinery to carry on our several projects may not be broken, for the projects begun under the war emergency have been carefully selected with reference to their valu in peace, as well as their special value in time of war.

Respectfully submitted,

FRANKLIN SHERMAN,
Chief in Entomology.

REPORT ON DIVISION OF HORTICULTURE

To the Director:

No phase of the work of the Horticultural Division has made such growth or has increased in its value and usefulness to the horticultural interests of the State as has the Extension Work. Stimulated by the need for greater food production the various projects of Horticultural Demonstration Work have been greatly increased in scope this year. To best serve the horticultural interests of the State the extension and investigational activities of the Division are very closely coordinated. The information collected by the investigational workers of the Division is made available to the fruit and trucking interests through the work and campaigns of the extension workers.

Through the Extension Farm News, the daily press, and by means of circular letters, the Division has urged the necessity of increased food production and conservation in all lines of horticulture. Through the demonstration men in the field, through farmers' institutes, fairs, and other agencies, every means of encouraging the increase and conservation of horticultural crops have been employed.

Sweet Potato Storage House Construction

The average yield of sweet potatoes during the season of 1918 was 112 bushels per acre, with a total estimated production of 9,072,000 bushels, having a farm value of approximately $12,000,000.

The importance of sweet potato storage can hardly be over-emphasized when the value of the crop and its great perishability is taken into consideration. The chief factor that limits the cultivation of the sweet potato is its poor keeping quality, and the fact that it rots if exposed to a temperature of below 45 degrees. By employing the best methods of storing and marketing sweet potatoes their value could be doubled without increasing the acreage or production. In this State potatoes are either rushed on the market at digging time, when the price is low, or stored in out-door banks. The employment of the bank method of storage is very uncertain, for in some seasons it is successful, while in others its use results in almost total loss, as was largely the case last year. It is estimated by the U. S. Department of Agriculture that on the average, from 25 per cent to 50 per cent of the potatoes stored in banks are lost.

The loss in houses last year was less than 5 per cent.

In 1917 a campaign was initiated by this Division to stimulate interest in sweet potato storage house construction. During 1918 the campaign was greatly enlarged. A cooperative arrangement was made with the Bureau of Markets of the U. S. Department of Agriculture by which Mr. J. H. Jeffries, Mr. W. R. Thompson, and Mr. S. G. Lehman, specialists in sweet potato storage house construction, were detailed for work in North Carolina, under the immediate direction of this division. These specialists, working in cooperation with the demonstration agents, visited all growers interested in the storage of sweet potatoes, annd furnished them with plans of construction, specifications and bills of material for building the storage house. Assistance was furnished those growers who built houses. Advice and instruction in the operation of storage houses were given to those growers who already

had built houses. Demonstrations were held, showing the proper handling of the potatoes during harvesting, an operation which is such an important factor in determining their keeping quality.

Extensive publicity regarding the value of sweet potato storage and the facilities that this division was in a position to furnish prospective builders was given through the Extension Farm News and the press.

As a result of the campaign the total number of houses constructed has been increased to 84, with a total capacity of 144,500 bushels. Particular mention should be made of the results secured in Nash County as a result of the work of the county agent. In this county, during 1918, 24 houses were built according to specifications and plans furnished by the Division of Horticulture. Nineteen of these houses were built under the direct supervision of the county agent. The houses have stored in them approximately 18,000 bushels of potatoes.

Throughout the State most of the houses have been built by farmers and are of 500 bushels capacity. A number of houses have been built by public institutions, such as orphanages, county homes, and State hospitals, and are usually of 2,500 bushels capacity.

The cost this year of a house of 500 bushels capacity, when material and labor have been high, has varied from $225 to $250. Some have cost considerably more where unnecessarily expensive lumber has been used and labor has been wasted.

The campaign was hampered this year to a great extent by the shortage of lumber and labor, and by the epidemic of influenza.

Below is a statistical report of the work during 1918:

Number of meetings	149
Number of people attending	638
Miles traveled by railroad	5,965
Miles traveled by automobile	717
Number of storage houses of approved type built previous to this year	9
Number of houses of approved type built this year	47
Number of houses of various types built this year	25
Number of houses of various types built previous to this year	3
Total number of houses	84
Total storage capacity	144,500
Number of prospective houses	78

Home and War Gardens

Of the many agencies at work to increase the production of food, perhaps none have been further reaching than the home and vacant lot gardening movement. The initial stimulus to home gardening was contained in the President's appeal of April 15, 1917, which included the much-quoted sentence, "Every one who creates or cultivates a garden helps, and helps greatly, to solve the problem of the feeding of the nations." Since that time home and vacant lot gardening has become very popular.

Early in 1918 a cooperative arrangement was made with the U. S. Department of Agriculture by which Mr. J. H. Jefferies, demonstrator in gardening, was secured to assist in the campaign initiated by this division for more gardens and better gardening. It was the purpose of this campaign to stimulate greater interest in gardening by furnishing advice and

information to home gardeners. The work was done largely in cooperation with the county and home demonstration agents. Lectures and demonstrations were given to individuals, and garden clubs, in school houses, courthouses, churches, chambers of commerce, and gardens. The formation of garden clubs was encouraged. The vacant lot and garden club plan was successfully employed in many mill villages and in some of the largest cities. In some places civic organizations, such as the chamber of commerce, boards of trade, and rotary clubs, developed the vacant lot garden movement with much success.

The war garden has not been valuable alone as a food producer, but has developed the interest in gardens to such a degree that home and club gardening will have a permanent place in the future thrift program of the State.

The following statistical report is submitted:

Number of garden meetings and demonstrations held during the year,	156
Total estimated attendance	21,307
Number of county, city, and home demonstration agents visited	111
Number of miles traveled by rail	8,503
Number of miles traveled by auto and team	1,025
Total number of miles traveled	9,528
Number of counties work conducted in	29

Demonstration Home Orchards

The campaign, started in 1917, to encourage the establishment of demonstration home orchards, was continued on a larger scale through this year. As a result of this campaign 106 of these orchards were established throughout the State.

It has been the plan of this project to plant one or more one-acre demonstration orchards in each county, so as to encourage the planting of home orchards on the farm. The demonstration orchards are located in cooperation with the county demonstration agents and under their supervision. The plantings are composed of varieties found by this division to be the most desirable for the different sections of the State. These orchards are to be used by the Extension Workers of Horticultural Division, in cooperation with the county demonstration agents, to demonstrate correct methods of pruning and other cultural practices.

One or more such orchards in every county, composed of the most desirable varieties, correctly planted and properly cared for, will encourage an increase in the amount and quality of the fruit grown for home consumption and local market.

To facilitate the work of this campaign and to meet the demands for information in regard to fruit growing in home orchards, Bulletin, Whole Number 241, entitled, "The Home Orchard," was prepared by W. N. Hutt. In this publication there are plans of one-acre orchards comprising the most suitable varieties of fruit for the Mountain, Piedmont, and Coastal Plain sections of the State, together with the most desirable arrangement of the trees. The requests for this publication indicate the active and growing interest in home fruit production.

Orchard Demonstration Work

As the horticultural interests of the State develop there is an increased number of calls for orchard demonstrations, orchard meetings, and assistance in solving individual orchard problems.

Under temporary appointment Mr. H. L. Hutt and Mr. Bolling Hall conducted a large part of the orchard demonstration work last winter and spring. Demonstrations were given in the use of the most approved orchard practices. Particular emphasis was placed on correct methods of planting and pruning. Demonstrations were given in orchard renovation work. Suggestions and advice were furnished regarding the best methods of orchard management, and systems of cultivating and cover cropping.

Advice and assistance was furnished in locating orchards, in planning orchards, and in the selection of the most desirable varieties. Orchards were examined and recommendations made to the owners regarding the best methods of management. Lectures were given in horticultural subjects at several schools and colleges. The orchard census work, to determine the extent of orchard planting in the State has been continued. Demonstrations in budding and grafting were held. Forty-nine orchard meetings were held in 29 different counties. Sixty-five consultation trips were made to individual orchards.

Orchard demonstration work is an important factor in the development of fruit growing in the State, as it informs the growers of the most approved methods in use. It encourages the adoption of the most up-to-date practices in fruit production. Through the work of orchard demonstration many orchards are placed on a paying basis that otherwise would be liabilities.

Judging Horticultural Products at Fairs

In so far as it was possible with the reduced personnel of the division it has been the policy of this division to send a member to judge the horticultural products at the fairs in the fruit-growing sections of the State.

Recognizing the value to the horticultural interests of the State of the fruit and vegetable exhibits at the various fairs, considerable time was devoted to the preparation of a horticultural premium list, with score cards for the use of judges. This list was made available to the fairs through Bulletin 243, of the North Carolina Department of Agriculture, by S. G. Rubinow.

Such a premium list is extremely valuable because it emphasizes the growing of the most desirable varieties, emphasizes the quality of products that are most profitably grown, and encourages the use of the most desirable pack and packages. In judging at the fairs this division is able to encourage the production of good marketable fruits and vegetables, rather than overgrown, ungraded, diseased, and insect-injured material. Incidentally the highest types of cultural methods are encouraged. In connection with the judging work detailed explanations and discussions of these points are made. In this way the horticultural exhibits at fairs and the judging work is of great educational value in improving and increasing the horticultural products of the State.

Drying, Evaporation, and Dehydration

Because of its growing importance the work with drying, evaporation, and dehydration has been made one of the major projects of the Division during the last year.

Very much interest has been displayed throughout the State in this method of fruit and vegetable conservation. An intensive campaign was inaugurated this year to further stimulate interest in the work and to disseminate information concerning methods and equipment employed in the operation. Demonstrations of dried products and the methods employed in drying were held in cooperation with the home demonstration agents. Advice, information, and plans were furnished to different individuals, communities, and mills regarding the manner of conducting the work on a community basis.

A circular, entitled "Drying of Fruits and Vegetables for Home Consumption," which had been prepared the previous year, was in great demand and was very useful in supplying information relative to the most satisfactory methods to employ in drying. Blue print plans, specifications, bills of material, and detailed descriptions of construction of home and community dryers were made and supplied to individuals and communities that were prospective builders.

An intensive publicity campaign to increase interest, and to supply information relative to drying as a means of conservation, was carried on through the Extension Farm News and the press.

A decidedly progressive step was the development of the community and mill type of dryer. While the number of communities and mills actually installing dryers was relatively small, this was due, in a large measure, to the lateness in the season with which they initiated the work, and to the difficulty of securing apparatus from distant points. From the interest displayed and the investigations made by communities and mills, the division is expecting a decided development in the use of this type of dryer next season.

A model of community effort along this line is the dehydrating and canning plant of the Rosemary Manufacturing Company, of Rosemary, N. C. Practically all of the surplus of the gardens of this community has been saved by either canning or drying at the dehydrating and canning plant.

As a result of the work done this year the amount of fruits and vegetables saved by means of home and community drying was greatly increased over that saved the preceding year.

After two years of intensive work with drying and dehydration as a means of conserving fruits and vegetables this division is in a position to furnish assistance to any one interested in the construction and operation of a dryer.

Respectfully submitted,

C. D. MATTHEWS,
Acting Chief, Division of Horticulture.

REPORT OF THE VETERINARY DIVISION

To the Director:

I beg to make the following report of the work of the Veterinary Division of the Extension Service for the year ending June 30, 1918.

Abortion Disease

Thirty-four representative dairies throughout the State were visited during the past year and information obtained regarding the number of abortions, retained afterbirths, and sterile cows existing in each herd. While less numbers of cases were reported than previously, sufficient evidence was obtained to indicate that the infection exists to some extent in most herds.

Instructions were given for the handling of this trouble along the lines of the most recent researches, namely: that aborting cows and sterile ones should not be sold at a sacrifice until after a judicious effort has been made to control the trouble. If one's herd is free from the infection no new animals should be introduced into the herd unless showing a negative reaction to an agglutination test of a blood sample. Careful antiseptic flushings of the vagina and uterus with appropriate manipulation of cystic ovaries will often prevent and correct sterilities which frequently follow abortions and retained fetal membranes. The real value of the use of biological products, while promising, have not been fully determined. During the past winter a serious complicating infection followed the retention of fetal membranes in six valuable dairy cows belonging to the State College. The infection caused a serious inflammation of the whole uterus, resulting in the death of nearly all affected animals from septicemia (blood poisoning).

Internal Parasitic Diseases

During the past fall and winter numerous inquiries and reports from farmers, demonstration agents, and veterinarians indicate that among young cattle, six to eighteen months of age, stomach worms and other intestinal worms cause a large number of deaths and unthrift. Owners of affected animals having badly infested pastures have been advised to put such pastures in cultivation, when possible. Animals showing signs of this trouble, largely indicated by unthrift and a baggy swelling under the jaw, should be treated as early as possible. Among the best agents which we have found for this trouble is a tablet composed of twenty grains of tartar emetic, ten grains of copper sulphate, and one grain of arsenic trioxide. One to three tablets should be given, depending upon the size of the animal, once daily for three to five days, then repeated for a like number of doses after a lapse of three or four days. The tablets should be dissolved in one-half pint or more of water and given as a drench before allowing the morning meal. No water should be allowed after the drench is given for six hours, and coarse feed should be greatly limited during the course of treatment.

Horse Influenza and its Complications

A large number of dealers in horses and mules reported many losses, due to pneumonia and respiratory edema following or apparently associated with influenza or shipping fever the past winter. We visited several dealers losing heavily, in an attempt to curtail their losses. Very little can be done for animals suffering with the complicating pneumonia in the later stages, but we believe good results followed the use of a prophylactic bacterin containing organisms usually found in these complications when given before signs of influenza develop, and likewise good results followed the use of a suitable serum for curative purposes when administered early in the course of pneumonia.

Swine Plague

A number of visits were made to farms where owners were losing hogs, following the use of anti-hog cholera serum. In all cases evidence pointed to an affection with the so-called swine plague and mixed infections. Good results apparently followed the use of swine plague and mixed infection bacterins. Evidently this disease, and perhaps other diseases due to mixed infections, complicate most cases of cholera, and, therefore, we believe the swine plague or mixed infection bacterins should be used with the serum in treating all infected herds, and used as a curtaive measure in cases of so-called chronic hog cholera. Few bacterins seem to have a more specific curative effect than those produced by the hemorrhagic septicemic group, to which swine plague belongs. (See Farmers' Bulletin 1018, U. S. Department of Agriculture.)

Diseases and Injuries Among College and Station Animals

As previously stated, a very serious complicating infection following retained afterbirths occurred among the dairy cattle belonging to the college. In addition the usual number of diseases and injuries to horses, mules, cattle, sheep, and swine belonging to the college and station were given attention. The tuberculin test was given to forty-three head of the college dairy herd, with no positive nor suspicious reactions.

Fairs and Livestock Meetings

Some half-dozen fairs were visited and rendered assistance in judging livestock during last September, October, and November. Several livestock meetings were also attended and discussions were made regarding various phases of diseases of livestock.

Farmers' Institutes

We were placed in charge of one of the farmers' institute parties during the past August and took part in twenty-one institutes.

News Articles

Several news articles for the Extension Farm News and other agricultural papers were written concerning the control of infectious and parasitic diseases of animals.

Correspondence

A considerable amount of correspondence with farmers, demonstration agents, and veterinarians concerning various kinds of diseases of animals has been conducted.

Laboratory Examinations

Specimens of diseased tissues, blood smears, milk, feed, parasites and other materials have been examined in the laboratory annd when possible diagnosis or other information from such examination was given.

Respectfully submitted,

G. A. ROBERTS,
Veterinarian.

REPORT OF DIVISION OF MARKETS AND RURAL ORGANIZATION

To the Director:

This report is for the year ending June 30, 1918, and covers the extension and service work of the Division of Markets and Rural Organization, conducted jointly by the North Carolina Department of Agriculture and the North Carolina State College of Agriculture and Engineering, in cooperation with the United States Department of Agriculture under the agreements and plans entered into by these institutions for the conduct of all agricultural work of this kind in the State.

General Surveys

Cotton—Investigation of cotton prices during the last year has continued along with the grading of cotton at the branch offices maintained at Raleigh, Tarboro, Wilson, and Lumberton. The purpose is to keep in touch with the processes of marketing to see to what extent our grading service is effective in securing farmers a price according to the grade of their cotton, and to give us a line upon producers' prices as compared to prices in other markets. Buyers increasingly are giving up the pernicious habit of buying at a flat rate and are more and more buying on grade. This is particularly true in Edgecombe County, where this division organized the Edgecombe County Cotton Exchange. The investigations of this last year, as well as those of previous years, show many wide discrepancies between prices for the same dates, grades and staples. It seems true for cotton, as for potatoes, that the possession of information concerning grades and market quotations does not guarantee that the farmer will be able to sell according to grade and obtain a price which is locally in line with those in primary market centers. The farmer, through organization or otherwise, must have the facilities for placing his products on more than one market in order to obtain the market price based upon grades.

Prices Paid for Cotton by Consumers—Arrangements have been made with a considerable number of North Carolina cotton mills to furnish samples of cotton, the price paid, and the grade contracted for, in order to determine consumers' prices and the margin between consumers' prices and producers' prices, or the cost of marketing cotton, and the extent mills obtain the grade of cotton which they contract for. Samples of cotton, together with the data asked for, were furnished for 7,777 bales. A comparison of the prices paid by the mills with the prices received by the producers for the same grades for the same dates show an average difference of 232 points, or $11.60 per bale. It is estimated that the actual cost, including freight and expense for handling cotton is $1.60 per bale. This leaves an excess profit of $10 per bale, or on this basis $7,500,000 for North Carolina. The normal or pre-war difference between producers' and consumers' prices is from one to two dollars a bale. Thus it would appear that a large part of the $7,500,000 might be saved if the mills established a central buying agency, and the farmers were organized in cooperative selling associations. Some deduction, of course, would have to be allowed on account of the purchases which mills already make direct from producers. A previous survey made by this division showed that 107 mills were interested in receiving offers from

responsible organizations of producers, provided the cotton was classed in large, even-running lots of a given grade and staple by competent State or Federal graders.

Distribution of North Carolina Cotton—The destination of all the cotton (468,159 bales), shipped from 22 towns that are representative of Eastern North Carolina, was traced from the records of transportation companies. From this investigation it appears that, whereas North Carolina mills were only consuming 20 per cent of this cotton in 1914, they are now taking over 60 per cent of it. This shows a large shift from export to domestic trade, which should in part be permanent to meet the increased demand of our North Carolina mills.

Damaged Cotton Shipped to Ports—A survey of all the North Carolina cotton received at the ports of Norfolk, Va., and Wilmington, N. C., during the last four years was conducted for the purpose of determining the loss to the producers from this source. It was found that 1,463,071 bales contained 51,608 bales damaged to the extent of 1,070,230 pounds that were lost and absolutely worthless, and worth about $5,000,000 that had to be sold as "pickings," at a loss of approximately 2½ cents per pound. From this investigation it appears that the loss to farmers during periods of high prices is not only increased on account of the value of the cotton lost, but that factors make claims for greater pound lossage than occurs.

Warehouse Facilities and Needs—A thorough investigation of the warehouse facilities available in the State was made and seems to indicate that existing facilities are not utilized because of improper location, construction and conduct. This investigation shows clearly that a properly constructed warehouse, offering reasonable rates and rendering active assistance in the sale of cotton stored in it, will receive a good patronage. One of the greatest faults with the warehouse facilities appears to be their small storage capacity, which does not permit a sufficient volume of business to justify the employment of a capable man to secure and retain patronage. A report has been made to the Railroad Administration upon this matter, with a recommendation that tariffs be so framed as to influence the erection of large warehouse and compress facilities at designated points within the producing area.

Public Weighers—An investigation has been conducted as to the effect upon prices at primary markets of public weighers and the conclusion reached that unless they are made responsible to some central authority their services hurt rather than help the producer.

Mill Requirements—A survey of the mills of the State has been conducted with the view of ascertaining the quantity and quality of cotton that they consume and that they (the mills) consider the most objectionable features of purchasing more of their supply within the State. This investigation shows that practically all of their objections would be met by the erection of compress and concentration facilities near the centers of production in the State.

Survey of Supply and Methods of Marketing Hogs—A survey of the swine population and market conditions over the State has been made. It shows that approximately 60.7 per cent of the hogs in the State are in the 39 counties lying east of Raleigh. The other 39.3 per cent are in the 61 counties west of Raleigh. Many of the couties east of Raleigh are espe-

cially in need of improved marketing conditions for hogs. In many of these counties the supply exceeds the demand; especially during the marketing months. Some few farmers raise enough hogs to market them in carload lots; however, most of the farmers depend upon local markets or shippers for a market for their surplus hogs. Glutted markets and absence of competition often compel farmers to take less for their hogs than they are worth. As a rule, farmers in the counties west of Raleigh can dispose of their surplus hogs very satisfactorily on local markets; provided an outlet is kept open to an outside market. If this division supplies facilities for marketing hogs in those sections where no local shippers operate, the local market will be held in line and the hog industry will be encouraged by the best possible prices obtainable at packing and distributing centers.

A trip was made to Tennessee, Alabama, and Mississippi to study the methods of marketing livestock in these states. In many sections the county agent takes a leading part in assisting farmers to market their products. County agents in one district, representing twenty counties in Mississippi, are reported to have sold products for farmers through associations amounting to $1,575,934.76. These sales included, among other products, 198 cars of hogs, 144 cars of cattle, and 37 cars of mixed livestock. Undoubtedly, the cooperation of county agents is needed if the marketing work is to be carried on in each county of the State.

Monthly Survey of Prices—Monthly survey of prices producers receive for corn, cotton, potatoes, hogs, peanuts, soybeans, and eggs is made to obtain a part of the material for publication in the Monthly Review of Producers' Prices, and to give this Division information concerning supply and location of products which are for sale cheap, in order that we may be in a position to direct inquiries for these products, and further, to inform us where work needs to be done to develop additional marketing machinery. The Monthly Review of Producers' Prices, which is published as an extension circular, has been widely printed by the press of the State.

Survey of the Needs of Farmers for New Marketing and Credit Facilities. The western part of the State, or mountain section, is being canvassed to learn the potato acreage and needs for assistance in marketing late Irish potatoes and livestock, and the eastern part of the State to determine what counties need assistance in marketing hogs, and where cooperative shipments can be developed, and the entire State, to learn communities which are suitable for organizing Credit Unions.

Surveys to Learn Market Needs and to Establish Connection With Possible Buyers—Visits have been made to potato dealers, to flour mills, cotton mills, hog dealers, and packing plants to find out the needs of markets, and to establish business connections for farmers who might wish to sell their products in these markets. Several questionnaires and special letters have been mailed to cotton mills, cottonseed oil mills, corn mills and produce and provision trade to find out possible demand for farm products.

Organization

The organization work may be divided into two parts (1) promotion, and (2) maintenance and supervision of organization. The former without the latter has proved dangerous. Marketing organization work in this State has proceeded very slowly, because of the discouragement from previous

failures. Several organizations are needed in the western part of North Carolina to market apples, potatoes and cabbage. A small beginning was made at Waynesville in the fall of 1917 through our organization of the Mountain Growers Exchange to handle potatoes, apples and other farm products for its members. A representative of this division, who is familiar with mountain people and conditions, helped a few growers to organize and later acted as manager to demonstrate the value of cooperative marketing and good business methods. As soon as the exchange began to operate last fall the price of potatoes rose from eighty cents to a dollar a bushel, and later in the season, when the exchange raised the price to $1.20 a bushel local buyers raised their prices accordingly. At the same time buyers in Hendersonville were paying only one dollar a bushel. Thus the exchange had the effect of raising the price of potatoes in the Waynesville section fifty cents a sack to both members and nonmembers. Through this exchange it is hoped to establish a standard of potato prices for western North Carolina. While the newly-established Market News Service will help inform the small grower of market conditions, organization is necessary to enable him to profit by such knowledge. The exchange has adopted the United States potato standard, and has graded and sold their potatoes according to this standard. The exchange has secured two government contracts. In fact the demand from different markets at good prices was much greater than the growers would sell. Many growers in western North Carolina lost money because they held their potatoes until spring. The policy has been to encourage the growers in other sections to cooperate with the county agents and organize them to ship with the Mountain Growers' Exchange, or in separate associations.

A representative from this division was loaned to the Carolina Potato Exchange to act as manager through the white and sweet potato season. Seven thousand nine hundred and fifty-eight barrels of Irish potatoes were marketed at an average net price to the grower of $3.10 per barrel, and 10,380 barrels of Jersey sweet potatoes at an average net price of $5.28 per barrel to the grower. A representative of this division was sent to assist the manager of the Tabor Produce Exchange market 2,520 barrels of white potatoes. This exchange was also assisted to market 10,820 crates of strawberries, at an average net price to the grower of $4.71 per crate. Preliminary organization work has been begun to start a potato exchange with central office at Washington, N. C., and branch offices at Aurora, Pantego, Pungo, and other shipping points. This exchange promises to be the largest in the State. Under the Food Administration regulation, which requires that all buyers ship graded stock, it will be easier to organize growers to grade their own potatoes in order to save the ten to fifteen cent charge made by buyers, and to perform the additional function of finding the best possible markets for their members.

The Edgecombe Cotton Exchange, organized by this division in 1915, during the last year has helped growers to sell their cotton on grade and to obtain the market price. For this purpose its manager receives a daily wire report of cotton prices and of market conditions. At a conference held recently between representatives of the Bureau of Markets and the members of this organization a plan was worked out for the growers to sign a contract

to sell their cotton through the exchange in order that the manager might know the amount of cotton he has for sale, and be able to assemble enough of a given staple and grade to sell to the mills. There is no competition on the Tarboro market, where the exchange is located.

Organization for Credit

During the year four new Credit Unions have been organized, making eighteen now organized, and preliminary work done in the organization of several others. The first Credit Union to be organized among negroes was incorporated this spring, with a paid capital of $263.50. This organization will be especially encouraged to show what can be done to promote organized saving and cooperative purchase of farm supplies among negroes. One or more meetings have been held with the members of each of the Credit Unions. A monthly financial statement is issued to the members to show the condition of each Credit Union in a composite report, to encourage saving and depositing funds in the Credit Union, and to promote cooperative purchase of supplies and better business methods generally.

The total share capital of the Credit Unions has increased during the year from $4,647.39 to $7,559.52; deposits from $7,664.40 to $11,329.35; loans from $14,518.14 to $21,248.51; and total resources from $19,515.65 to $24,-565.79. The amount borrowed from banks decreased from $6,315 to $4,175. One hundred and fifty-six members are borrowers, or 24 per cent of the membership. The loans made averaged $122.36 each.

Only those Credit Unions are successful which make cooperative purchase of supplies, either through their treasurer or through a separate organization. Cooperative banking among farmers becomes cooperative financing of cooperative purchase of supplies. Fertilizer has been the main supply bought by the Credit Unions. At Valdese the farmers and mill employees and mill employers cooperate in maintaining a Credit Union, a supply store, a mutual benefit association, and a mutual fire insurance association. One of the beneficent results of these cooperative activities, the director of one of the mills stated, is that the employees are more contented. The plan of a former treasurer of the Lowe's Grove Credit Union was to make the Credit Union the organization through which the whole community is organized. It is certain that cooperative short time credit is very closely knit with cooperative purchase of supplies. Especially is this true in view of the conclusion reached in a previous investigation, when it was found that 58.4 per cent of the value of the cotton crop was advanced by merchants to farmers in the form of supplies, or approximately supplies worth $30,000,000 at an average rate of 19.2 per cent more on time than for cash.

One of the purposes of the Credit Union is to put its members, including tenants, upon a cash basis, and thus free them from the supply store system of credit. The credit committee takes the place of the supply merchant. The treasurer of the Carmel Credit Union reports saving $756.11 through enabling members to buy for cash. The plan of operation in this Credit Union, as given by the treasurer, is herewith submitted:

J. M. WALKER, Pres. C. M. HUTCHISON, Vice Pres.
W. H. PHARR, Secretary-Treasurer.

CARMEL CREDIT UNION

Charlotte, N. C., March 1, 1918.
R. F. D. No. 1.

Dear Friend:

You want your bank—the Carmel Credit Union—to continue its successful service? Then study these figures:

1917—Loans made	$5,000	
Total interest received		$ 253.03
Where did we get the $5,000?		
1917—Capital in shares paid and average deposits	$1,250.00	
Borrowed from bank at 5 per cent	3,850.00	
	$5,000.00	
1917—Total interest paid		$ 134.89
Earnings in interest		118.14

Undivided profits, 1917, sufficient to declare 6¼ per cent dividend on paid up capital. (Added to surplus fund.)

1918 Plan

Pay 4½ per cent interest to bona fide members on time deposits of six, nine, or twelve months.

1918—Capital in shares paid and average deposits	$1,500.00
To bring additional share capital (estimate)	500.00
To bring additional time deposits (estimate)	3,000.00
	$5.000.00

Then:

Interest paid for borrowed money—none.	
Interest on $5,000, estimated loans 1918	$ 253.03
Interest on $3,000 deposits, average 9 months	101.00
Estimated earnings in interest (goes to depositors)	$ 152.03

Estimated that share capital by this plan will earn 12 to 15 per cent, at the same time paying bona fide member depositors 4½ per cent on time deposits (a better rate than any State or National bank pays) keeps the money in the community. Is this not interesting?

Make our bank self-supporting.

State and National banks and trust companies are not seeking loans now, even at 6 per cent. They are investing in Liberty Bonds, War Savings Stamps, etc. May we not show a fine form of patriotism by making our money work at home, for the farmers, enabling us to purchase for cash and in bulk, and thus save to produce more food and feed stuff? Uncle Sam asks for no patriotic service that will mean more toward winning the war.

So bring, send, or mail your deposits in, and now, while you have it on your mind, is the best time. Cordially yours,

W. H. PHARR,
Secretary-Treasurer.

By order of the Board of Directors.

One of the obstacles which stands in the way of the success of Credit Unions and of cooperative action among farmers generally is the vested interests of the present system of business, which as now organized has

the power to effectively discriminate against all farmers' organizations. The Credit Unions have found it very difficult to get wholesale rates on wholesale purchases. As long as wholesalers are allowed by the government to discriminate against farmers who pool their purchases in wholesale lots, farmers are going to be deprived of one of the greatest advantages of organizing for cooperative purchase and cooperative short-time credit. It was, therefore, recommended that the Food Administration exercise the authority conferred upon it by section 5 of the Federal Food Control Act to prevent such discrimination, as a war measure to encourage maximum production. The attention of all members of Credit Unions and of farmers generally has been called to the following ruling secured by the Secretary of Agriculture from the principal fertilizer manufacturers and wholesalers:

"We will in future charge the same price in wholesale lots of not less than thirty ton carloads, or such carload unit as may be fixed by the Car Service Section of the United States Railroad Administration, of the same grade and quality, to individuals or associations for cash or bankable security, as we do to merchants or dealers in the same locality or f.o.b. factory."

A survey is being made of Credit Union and Cooperative Purchase Associations to find out their experience in getting wholesale rates, in order to make up a list of the wholesalers who are inclined to give favorable terms to farmers' organizations.

Service Work

A considerable part of the service work has already been indicated in connection with the investigations and organization work, all of which are for the purpose of service. The service work of this division might be summarized under the main heads of (1) cotton grading, (2) assistance to individual farmers and to organizations of farmers in marketing cotton, potatoes, strawberries, corn, hogs, and soybeans, (3) market news service, (4) assistance in securing short time credit through credit unions, (5) assistance in making cooperative purchase of supplies in connection with credit unions and other organizations, and (6) assistance in securing long time credit through the formation of National Farm Loan Associations.

Grading Cotton for Producers—The activities of this project have been chiefly confined to classifying the cotton produced in the counties of Bladen, Carteret, Edgecombe, Green, Martin, Onslow, Pender, Robeson, Sampson, and Wilson, while the cotton was still in the hands of the producers. The plan has been to arrange with the ginners of these counties to send a sample of every bale of cotton ginned by them, together with the name and address of the owner, to one of the grading offices, which were located at Clinton, Lumberton, Raleigh, Tarboro, and Wilson. Upon receipt of the samples at the grading office they were classed and a grade card representing, and numbered to correspond with each bale, was sent to the owner. With each grade card a sheet was sent showing how many points on or off middling and its equivalent in dollars and cents on a 500-pound bale. A total of 28,862 samples were handled in this manner and enabled the farmers to form an intelligent opinion as to the price of their particular grade of cotton.

Grading for Producers and Middlemen—The classers at the different grading offices classed 11,231 bales directly from the bale itself. In most instances classing of this character should be considered as rendering a

valuable service, both to the buyer and seller, since it was done at the request of both.

Grading for Consumers—Cotton mills in the State have sent to the grading office located in Raleigh, 7,830 samples, together with a statement giving the grade and staple purchased, date of purchase and purchase price. The samples were classed promptly and the mills notified of the grade and staple of each bale.

Results of the Grading Service as a Whole—The different offices classed 47,923 bales and rendered active assistance in the sale of about 12,000 bales. A number of mills and large buyers were informed where they could buy cotton of a particular grade and staple, and in most cases were referred to individual producers or organized holders. The data indicates that the service has been worth at least $150,000 in direct money returns to the producers. Merchants, small buyers and local mills have profited appreciably by this grading and marketing service. Our data shows conclusively that the cotton sold in territory contiguous to the grading offices is purchased increasingly on grade. The opposition of buyers is, in some instances, changed to a support of the work after the service has been in operation long enough to show its worth. The opposition of ginners, whenever they may be interested in buying, is one of the greatest obstacles. If this obstacle is removed by State legislation, North Carolina, with very little extra expense, may have a State-wide system of cotton grading. One of the main virtues of this system will be grading the product before it leaves the hands of the farmers.

It appears that the grading work, through obtaining an increasing recognition by buyers of grade and staple, is gradually improving the quality of the cotton produced in North Carolina. There is no doubt but that the average length of staple is longer than it was when the work was instituted.

Marketing—Assistance was rendered in the cooperative marketing of 10,478 barrels of early white potatoes, 1,800 sacks of late white potatoes, usually in less than carload lots, 10,380 barrels of sweet potatoes, 10,820 crates of strawberries, and ten cars of corn.

Assistance was given to farmers in buying seventeen cars of hogs, and in selling ten cars. Seven of the seventeen cars bought were obtained from farmers whom we assisted to sell their hogs. The other ten were bought outside the State and consisted of four cars of breeding hogs and six of feeder shoats.

This division has assisted in marketing an unknown amount of potatoes, corn, soybeans, and other farm products through the suggestions given by correspondence.

Two government contracts for late white potatoes were secured by the Mountain Growers' Exchange. A large amount of farm products could be sold direct to the government with profit to farmers and to the government, and what is vastly more important, with the result of encouraging the permanent organization of farmers generally, that is, if the government would lay down the conditions favorable to such sale as it has done in the case of prunes and wool. The discriminations of business against farmers' organizations are so numerous that only the government can establish that equality of conditions which will favor the sale of farm products through organizations of farmers.

In connection with assisting in marketing the 1918 wool clip in the State, a survey of the woolen mills was made. Two mills have government authorization to buy direct from farmers, and are paying from 70 to 75 cents for good clear wool, delivered. Farmers have been instructed concerning the government plan for the disposal of the 1918 wool clip through letters and addresses at meetings.

Market News Service—The Market News Service of this division embraces (1) daily bulletins issued in cooperation with the Federal Bureau of Markets, (2) weekly price report, and (3) monthly review of producers' prices. Daily market news service offices were operated during the last eighteen months by this office in cooperation with the Federal Bureau of Markets for the compiling, printing and distributing reports at Laurinburg for cantaloupes and watermelons; at Elizabeth City for sweet potatoes; at Waynesville for late white potatoes and apples; at Chadbourn for strawberries. Twenty-one thousand and one hundred bulletins from the Laurinburg office were mailed to cantaloupe and watermelon growers and shippers, 13,444 bulletins from the Elizabeth City office to sweet potato growers and shippers, 8,210 bulletins from the Waynesville office to the growers and shippers of late Irish potatoes and apples, and 8,160 bulletins from the Chadbourn office to the growers and shippers of strawberries. The newly established daily market news service operated at Waynesville by this division, in cooperation with the Federal Bureau of Markets, brought, for the first time, news of general market conditions to the small growers of Irish potatoes and apples scattered through the mountains of Western North Carolina.

The Weekly Price Report quotes prices paid by merchants for corn, oats, wheat, soybeans, cowpeas, Irish potatoes, sweet potatoes, apples, home-made butter, North Carolina creamery butter, eggs, poultry, dressed hogs, country hams, live hogs, peanuts, cotton, cotton seed, and cottonseed meal delivered at twelve of the leading North Carolina towns, and corresponding jobbing prices for cotton, corn, hogs, potatoes, butter, cheese and eggs on one or more of the leading markets of the United States. These reports give the farmer and merchant a basis of comparison of local prices with those of one or more leading markets to show whether home markets are in line. They have proved of value to farmers and buyers to indicate where to sell and buy, and to industrial departments of railroads to show them North Carolina markets.

The Monthly Review of Producers' Prices is distributed to farmers, merchants, and the press of the State, to show the movement of prices at country loading points and at primary markets, with an effort to interpret conditions to the extent that the facts allow. The policy is to show the facts affecting market conditions. In connection with the early white potato crop a special survey was made of conditions in North Carolina and Virginia, which was published in the Review and proved of special service to growers and shippers in guiding them as to the best time for marketing of their crop.

Other Service—Studies were made of types of potato grading machines, requirements of United States Standard Grades for truck crops, and suitable accessible containers for same, and their use was encouraged among growers.

Assistance was given in locating high grade sweet potatoes, seed and purebred stock.

Publications

Daily Market News Service Bulletins.

Fifty-two Weekly Price Reports.

Eleven issues of the Monthly Review of Producers' Prices, written by the staff of the Division of Markets.

Six Farmers' Market Bulletins.

Extension Circular 54, entitled "Length of Staple of Cotton Produced in North Carolina," by O. J. McConnell.

Extension Circular 60, entitled, "What is a Credit Union," by Wm. R. Camp.

Revised form of Credit Union By-laws, compiled by Wm. R. Camp.

Ten Monthly Financial Statements of the North Carolina Credit Unions.

Articles on Cotton Grading, Cooperative Purchase of Fertilizers, Value of Market News Service, Cooperative Corn and Hog Marketing, Marketing Home Cured Meats, and Potato Grading were written by the staff of the Division of Markets and published in the Extension News and press of the State.

Respectfully submitted,

WM. R. CAMP,
Chief, Division of Markets, Field Agent in Marketing.

REPORT ON DRAINAGE

To the Director:

I herewith submit the annual report on Drainage for the fiscal year ended June 30, 1918:

The work has been conducted chiefly along the same lines as in previous years. In general, the extension part of the work consists (1) in assisting farmers in the improvement by drainage and terracing of lands now under cultivation, and (2) in preliminary and reconnaissance work for drainage districts desiring to undertake drainage improvements. The following summary gives a fairly accurate idea of the amount of work done along these lines:

Mr. F. R. Baker, assistant drainage engineer, entered military service in August, 1917. Mr. F. O. Bartel, junior drainage engineer, of the U. S. Department of Agriculture, acted in Mr. Baker's place for the six months beginning January 1, 1918.

Farm Drainage

During the past year preliminary and location surveys, designs and reports for tile drainage systems have been made on 42 farms, in 23 counties, comprising a total area of 2,400 acres. Portions of the systems designed have been installed on some of the farms. Approximately 76,200 feet of tile have been staked out on the ground.

Twenty farms have been visited for the purpose of giving assistance in the location and construction of terraces to prevent hillside erosion; the total length of terraces laid out, approximately 181,000 feet.

Preliminary Examinations and Reconnaissance

Three examinations of a preliminary or reconnaissance nature have been made, and reports issued, covering a total area of 14,400 acres. A report and specifications for proposed maintenance work in one of the large drainage districts in the State was prepared.

Respectfully submitted,

H. M. LYNDE,
Senior Drainage Engineer.

REPORT OF THE DIVISION OF PLANT PATHOLOGY

To the Director:

I submit herewith my report of the extension work in Plant Pathology for the period of time between December 21, 1917, and July 1, 1918. The work was conducted jointly by the North Carolina Department of Agriculture, the North Carolina College of Agriculture, and the Office of Cotton, Truck, and Forage Crop Disease Investigations of the United States Department of Agriculture, and was carried on in cooperation with the county agents. This report includes work done by the latter under our supervision.

Cotton Anthracnose

Cotton anthracnose, or boll rot, is prevalent in North Carolina whenever conditions are favorable for its development, and some years it causes a great reduction in the cotton yield of the State. Investigators have found that the disease is disseminated largely by means of infected seed. All seed in infected bolls, or in bolls adjacent to them, are likely to be infected. It has also been found that the fungus, which causes cotton anthracnose, can live in the soil for one, or possibly, two years.

Cotton growers in the State were urged to use cotton seed for planting which was obtained only from fields practically free from anthracnose last year, selecting the variety of cotton which has proven to be best adapted to their local conditions. They were advised to plant this seed on land where the disease had not been prevalent for the past two years, or, better still, on land which had not grown cotton for one or two years. Many cotton growers were given names and addresses of men from whom high grade cotton seed could be obtained. The fields which are grown from this seed will be carefully inspected before the cotton is picked, and if a large percentage of the plants is infected with anthracnose the grower will be advised not to save any of the seed for planting. If only a small percentage of the bolls is infected and the cotton is to be ginned at a public gin, the grower will be asked not to have this cotton ginned until most of the ginning for the season is over. Then he will be required to have the gin thoroughly cleaned and gin this cotton separately, thus insuring pure seed. The grower may use this seed for his own planting and if he has a surplus he can offer it for sale as coming from a field almost free from anthracnose. High grade cotton seed, grown in fields almost free from anthracnose, were grown in Anson, Cumberland, Craven, Edgecombe, Beaufort, Johnston, Lenoir, Nash, Pender, Pamlico, Pitt, and Union counties, covering an area of about 850 acres. We expect to get about 14,500 bushels of high grade cotton seed from these fields for planting in the State next year.

Cotton Wilt

Cotton wilt is caused by a fungus which lives over from year to year in the soil. After the soil becomes infected it is almost impossible to rid it of the fungus, and the disease is likely to reappear, even if no cotton is planted on the land for five or six years or longer. Wilt is prevalent in some parts of North Carolina, and often causes very serious losses in the cotton crop. The only method by which wilt can be controlled is by planting varieties which will resist the disease. Dixie wilt-resistant cotton was grown in wilt infected fields in Anson, Edgecombe, Craven, Pitt, and Pender counties.

Sweet Potato Diseases

In cooperation with the Department of Horticulture and Dr. Lauritzen of the United States Department of Agriculture, the sweet potato growers were assisted in recognizing common field diseases, and were advised how to control them. They were encouraged to construct sweet potato storage houses, or to remodel those which were improperly constructed, and were told how to handle their potatoes in the field and in the houses to avoid storage rots. The most important sweet potato counties in the State, and all growers whom we knew had storage houses, were visited. Some of the houses seemed to be very well constructed and well managed, while others were poorly constructed and managed.

Fusarium Wilt of Tomatoes

There are two wilt diseases of tomatoes prevalent in North Carolina, the fungus or Fusarium wilt and the Bacterial wilt. In both cases the organisms which cause the wilt live in the soil. A tomato known as the "Norton" has been bred to resist the Fusarium wilt by the United States Department of Agriculture. It has not, however, been bred resistant to the Bacterial wilt. In order to determine whether this variety would prove profitable to grow on land infected with fungus, which causes the fungus wilt, seed of the Norton tomato was distributed to canning club girls by the home demonstration agents in the following counties: Nash, Wilson, Robeson, Edgecombe, Sampson, Bertie, Catawba, and Davidson.

Watermelon Wilt

Like the tomato wilt the organism which causes the watermelon wilt lives in the soil. A variety of watermelon known as the "Conqueror" has been bred by the United States Department of Agriculture and a similar line of breeding has been continued by the North Carolina Experiment Station. The wilt-resistant watermelons are not being recommended, at present, for commercial growing, but are valuable where melons are grown for home consumption and local markets on wilt-infected land. Wilt-resistant watermelon seed was sent to the county agents to be distributed for growth on infected land in the following counties: Macon, Nash, Edgecombe, Moore, Haywood, Robeson, Chowan, and Caldwell.

General

The meetings of the county agents were attended and plans discussed with them. Many individual farmers were visited, in company with the county agents, and they were given advice regarding the control of cotton rust, anthracnose, and wilt, sweet potato diseases, fire blight and blotch of apples and pears, brown rot of peaches and plums, tomato wilt, leaf spot, and rot, potato blight, rot, and scab, cabbage clubroot and blackrot, bean blight and anthracnose, etc. Meetings of farmers were addressed on plant diseases and correspondence was carried on with farmers and county agents about the control of plant diseases.

Respectfully submitted,

R. A. JEHLE,
Extension Pathologist.

REPORT ON FAIRS AND ASSISTANT TO DIRECTOR

To the Director:

I submit herewith report covering the activities of this part of your administrative office for the period of time between December 1, 1917, and December 1, 1918.

Fair Work

Prior to the epidemic of Spanish influenza, which visited the State in such a serious form this year, all indications pointed to an unusually successful fair season. The fair work had been organized and standardized until it represented a fundamental educational project in terms of better agriculture, more desirable livestock, and good community organizations.

FIG. 16. COMMUNITY FAIR AT THE BAHAMA FARM-LIFE SCHOOL

Almost the entire fiscal year was spent in developing the fair work, not only with fair secretaries, but through county farm and home demonstration agents. The attempt to classify fairs worked out exceptionally well, so that at the beginning of the active fair season each fair was clearly designated as to its character, and as to the type of community it represented.

Applications for State aid and for the provision of judges, September 1, 1918, which marked the closing date for receiving applications, included the following number and types of fairs:

1. One Special Livestock Show.
2. One Special Horticultural Show.
3. Seven District Fairs.
4. Forty County Fairs.
5. One Hundred Seventy-two Community Fairs.
6. One Negro State Fair.
7. Eight Negro County Fairs.
8. Twenty Negro Community Fairs.

The plan for provision of judges, which was very satisfactorily worked out, called for judges from all divisions of the Extension Service, Experiment Station, the State Department of Agriculture, and the State College of Agriculture and Engineering in the following manner:

1. Four judges for each District Fair.
2. Three judges for each County Fair.
3. Two judges for each Community Fair.

The cooperative premiums offered jointly by the State Department of Agriculture and the local fair associations were also satisfactorily arranged on the following basis:

1. A fifty dollar premium list for Community Fairs.
2. A two hundred dollar premium list for County Fairs.
3. A three hundred dollar premium list for District Fairs.
4. A five hundred dollar premium list for the State Fair.

The Negro fairs were placed on the same basis as the other fairs, where they met and fulfilled satisfactorily the necessary requirements.

Just as the fair season was inaugurated the Spanish influenza epidemic broke out and the fair work was postponed until another year.

The very best cooperation was given the fair work this year by the various divisions of the various organizations and institutions participating in the work. The Committee on Fairs gave material assistance, and the district agents of the Farm Demonstration Division were largely responsible for carrying out the plans of the work and making them applicable to local conditions. The county farm and home demonstration agents labored unceasingly in making the fair work a success, and will, undoubtedly, carry over their plans until the next season. There is a greater desire for the work than ever before, and the plans are in such shape now as to allow the work to move along automatically and mechanically under the guidance of the Committee on Fairs and the district and county agents on the Farm and Home Demonstration Divisions.

One bulletin and two circulars were published on fair work, designated as follows: Department of Agriculture Bulletin No. 243, Composite Premium List and Official Judges' Score Cards; Extension Circular No. 68, The Organization and Management of Fairs; Extension Circular No. 69, Fairs and Their Educational Value.

One poster was also published, designated as follows: Extension Service Poster No. 15, The Agricultural Community Fair.

A movement has been started to organize an association of fair secretaries. This will grow this year and will make a valuable organization, through which to develop fair work and by means of which to reach our farmers and their families along agricultural, livestock, and home economic lines.

Second Food Survey

The Second State Food Survey, in cooperation with the Federal Bureau of Markets, was completed April 1st, and a report concerning same was made on April 4th. Fifteen hundred schedules, covering 59 counties, were issued and 1,305 schedules were returned. This survey estimated the amount of

consumers stock in households, and the work was highly commended by the Federal Bureau of Markets. Twenty-four home demonstration agents and 36 farm demonstration agents conducted this survey, covering 80 per cent of rural white families, 12 per cent of rural negro families and 8 per cent of urban white families. The results of the survey were published in the general and agricultural press. Much credit for this splendid work was due largely to the farm and home demonstration agents participating.

Miscellaneous Work

This office assisted, as usual, with matters pertaining to the draft, involving a very heavy correspondence. Most satisfactory results, in securing deferred classification of necessary employees were obtained.

Fig. 17. An Exhibit of Peaches, String-beans and Soup Mixture Packed by First-year Club Girls of North Carolina

At the request of Dr. W. S. Rankin, Secretary of the State Board of Health, and Col. C. W. Stiles, of the Federal Public Health Service, this office assisted in the epidemic of Spanish influenza. Two weeks were spent in the field organizing counties and communities in controlling the epidemic.

This office participated in a School for Extension Workers, at Fort Collins, Colorado, during the last week in June, where we gave five lectures on extension and demonstration work. The audience was made up of representatives from four northwestern states and the lectures were also attended by the staffs of the Agricultural College of Colorado and the Extension Service and Experiment Station of Colorado.

The statistical report of the office is as follows:

Statistical Report of the Office (From Dec. 1, 1917, to Dec. 1, 1918)

1. Travel—	
Number of meetings attended	21
Number of addresses given	21
Number of addresses given in other states	6
Attendance at such meetings	2,682
Number of agents visited	102
Number of conferences held	89
Number of miles traveled	14,341
2. Correspondence—	
Letters	2,185
Special form letters—22 issues	284
Circular letters:	
Fairs—38 issues	15,925
Selective service draft—16 issues	1,665
Second food survey—5 issues	455
Total correspondence	20,514

Respectfully submitted,

S. G. RUBINOW,

Assistant to Director and Chairman Fair Committee.

REPORT ON PUBLICATIONS

To the Director:

During the fiscal year ending July 1, 1918, the office of the agricultural editor has devoted its time largely to the preparation and dissemination of information and publicity matter from the Agricultural Experiment Station and Extension Service. Special emphasis and a greater part of the time of the editor was devoted mainly to those problems which confronted the agricultural organization as a result of the war with Germany. As far as publicity matter is concerned the papers were flooded with this material by various organizations, until it became a burden to a great number of them; especially to the small county weeklies. Considerable time and care had to be given to the preparation of the copy from this office, in order that this might appear in as many of the papers as possible. Some success attended these efforts. Several different surveys were made of the papers in the State Library, and it was found that fully 75 per cent was using the matter sent them. Of course every paper would not use everything sent, nor would each news article prove equally popular with them, but at least this percentage of the total did use the material furnished them.

During the year the office inaugurated the system of mimeographed daily material to a selected list made up of 200 of the leading newspapers. This mimeographed matter contained most of the light, newsy material, the heavier informational matter being saved for use in the Extension Farm News, and other ways. By setting a release date on each article, allowing the papers at the farthermost postoffices time to receive their copy, most of the papers used this service very freely.

During the year an average of about one article per day has been sent out. In addition to this, eight large Sunday papers have received specially prepared news stories for a good number of their Sunday issues. Many different articles also have been prepared for out-of-State papers, and for the leading agricultural magazines of the country. Specific instances might be cited in the case of the Manufacturers' Record, the Country Gentleman, the Breeders Gazette, the Progressive Farmer, and the Southern Agriculturist.

Aside from news material the extension circulars were rated as highly important in our informational service. During the year a total of 24 circulars were issued with a total of 259,000 copies being printed and distributed. The outside covers of these circulars have been improved because it was found by a careful study of the subject that the circular needed to be made more attractive to have it read freely. It is planned to extend this improvement to all classes of publications issued through the office.

The circulars as issued are as follows:

Extension Circulars

No. 49. Fall or Second Crop of Irish Potatoes in Eastern North Carolina.
No. 50. Drying of Fruits and Vegetables for Home Consumption.
No. 51. Program Boys' Short Course.
No. 52. Beekeeping Practice in North Carolina.
No. 53. The Growing of Wheat in Eastern North Carolina.
No. 54. Length of Staple of Cotton Produced in North Carolina.

No. 55. A Farm Smokehouse and Smoke Building Contents for North Carolina Club Members.
No. 56. Soybean Harvesters.
No. 57. Soybeans—A Future Economic Factor in North Carolina.
No. 58. A Meat Curing Contest for North Carolina Pig Club Members and Curing Meat on the Farm.
No. 59. Methods of Saving Sugar, Fats, Wheat, and Meat.
No. 60. What is a Credit Union?
No. 61. Tobacco Wild Fire.
No. 62. Home Making of Cottage and Buttermilk Cheese.
No. 63. Where Good Seed of Recommended Varieties May be Obtained.
No. 64. Successful Sheep and Lamb Raising.
No. 65. Food Production Campaign for North Carolina.
No. 66. Orchard Spraying.
No. 67. Boys' Agricultural Club Circular.

In addition to the 24 circulars the Extension Service has issued six posters, with a total of 30,000 copies distributed.

One report of 119 pages, with a total of 1,000 copies, was also printed and distributed.

On the mailing list maintained by the service there is now a total of 64,000 names. This list is carefully gone over and kept up-to-date in every respect.

The Extension Farm News is being printed and distributed to a total list of about 2,000 names. Our former policy of sending this only to the press and to those in a position to be of service to others is being strictly adhered to, no effort being made to build up any large mailing list. While the mimeograph matter has largely supplanted the Extension Farm News in the columns of the press of the State, the News is still very valuable as a house organ, and is also being clipped to some extent.

During the year a total of 958 circular letters and other matter has been multigraphed, of which 622,502 copies have been issued, 363,321 of these being mailed from the office and the others sent back to the office of origin in bulk. During the same time 99,915 circulars have been printed by some of the outside printing shops, with 98,865 of these being mailed from this office. This makes a total of 722,417 circulars which have been multigraphed or printed, and a grand total of 462,186 circulars which have been mailed from the office during the last fiscal year.

For the Experiment Station 1,000 copies of the annual report have been edited and distributed. Bulletin No. 238, "Harvesting Tobacco by Priming or Picking the Leaves as Compared with Cutting the Stalks," and No. 240, "Composite versus One-day Sampling of Milk for the Babcock Test," have been issued in an edition of 15,000 copies which were printed and distributed to the general list. Circular No. 33, "Cow Records Pay," was reprinted for the Dairy Field Office, and one Technical Bulletin, No. 14, "The Repair of Bone in Domestic Fowl," was edited and issued. This latter was printed in an edition of 3,000 copies.

Twelve bulletins and six supplements were edited and issued for the Department of Agriculture during the year. Most of these were issued in an

edition of 11,000 each, but in some cases, where the bulletin was more important, 15,000 were printed, in order that a supply might be on hand for later use.

During the same period also four market bulletins, with a total edition of 3,500 copies each, were also issued and distributed.

More trips than usual were taken out over the State in the interest of the organized agricultural work, and all of the test farms were visited and written up for the large daily papers. The beef cattle experiments on the farm of Mr. T. L. Gwynn of Springdale and the experiments with sheep on the farm of Mr. S. T. Henry at Spruce Pine also were visited for the same purpose. The beef cattle work being conducted on Mr. Gwynn's place received notice in the Breeders Gazette, in addition to that given it by the large dailies of the State. The National Sheep Breeder of Chicago, Ill., carried a story in regard to the work being done on Mr. Henry's place. Photographs made by this office were used in illustrating both of these articles.

One other trip to the meeting of the American Association of Agricultural College Editors at the University of Tennessee, Knoxville, was also attended. The editor was elected as a member of the Executive Committee of the Association at this meeting.

Five papers have issued Better Farming specials during the year, the principal ones being that of the Winston-Salem Sentinel in the early spring, and of the Charlotte Observer on May 26. Both of these were well received by the readers, and commented upon by the press of the State.

In addition to cooperating with all of the workers in the matters which they have wanted to put before the people this office has conducted certain well defined publicity and informational campaigns. Special stress was laid on the matter of food production. The campaign for more wool and mutton, and lately a rat campaign for the destruction of these vicious rodents were pushed by this office. Part of the time in the spring of 1918 was devoted to a strong campaign for more club members. We were aided in this by Governor Bickett's "Reserve Army Proclamation," of which 16,500 copies were distributed from this office.

Taken as a whole the work done during the year has been gratifying to a great degree, but it has not been entirely satisfactory, due to the strong competition from all those agencies wishing to put their work before the people. The newspapers of the State have been faced with a greater demand on their space than ever before. It is believed, however, that a fair percentage of all the space given to the various activities was awarded to the Agricultural Extension Service of the State College of Agriculture and Department of Agriculture.

The office has continued its work of mailing the letterhead and envelope supplies to the county agents, and of handling the printing problems of the different divisions.

Respectfully submitted,

F. H. JETER,
Agricultural Editor.

FINANCIAL REPORT

The North Carolina Agricultural Extension Service In Account With The United States
Appropriations Under Smith-Lever Act, 1917-1918

	Smith-Lever Funds	
	Federal	State
Dr.		
To receipts from the Treasurer of the United States and from State sources as per appropriations for fiscal year ended June 30, 1918, under act of Congress approved May 8, 1914 (Smith-Lever Act)	$71,207.07	$61,207.07
Cr.		
By Salaries	$45,953.38	$46,436.34
Labor	322.17	427.19
Printing and distribution of Publications	3,310.00	3,310.00
Stationery and small printing	2,306.84	1,880.77
Postage, telegraph, telephone, freight and express	1,678.16	2,268.67
Heat, light water and power	1.68	12.00
Supplies	977.32	343.99
Library	70.59	144.61
Tools, machinery, and appliances	143.77	17.35
Furniture and fixtures	2,195.61	629.23
Scientific apparatus and specimens	31.50	.....
Traveling expenses	14,066.06	5,478.88
Contingent expenses	149.99	258.04
Totals	$71,207.07	$61,207.07

We, the undersigned, auditors of the corporation, do hereby certify that we have examined the books and accounts of the Extension Division for the fiscal year ended June 30, 1918; that we have found the same well kept and properly classified; that the receipts from the Treasurer of the United States were $71,207.07 under the act of Congress of May 8, 1914, and the corresponding disbursements $71,207.07, leaving a balance of nothing; that there have been expended as an offset to the Federal Smith-Lever funds $61,207.07 State funds, for all of which proper vouchers are on file and have been by us examined and found correct.

And we further certify that the expenditures have been solely for the purposes set forth in the act of Congress approved May 8, 1914, and in accordance with the terms of said act.

(Signed) W. H. RAGAN,
W. B. COOPER,
T. T. THORNE,
Auditors.

(Seal)
Attest: A. F. BOWEN, Custodian.

Examined and approved as correct.

B. W. KILGORE,
Director of Extension.
B. R. LACY,
State Treasurer.

SUMMARY STATEMENT OF EXPENDITURES BY PROJECTS, SHOWING CLASSIFICATION OF EXPENDITURES FROM ALL FUNDS, EXCEPT THOSE FROM THE DEPARTMENT OF AGRICULTURE, USED FOR EXTENSION WORK

	Total	Administration	Printing and Distribution of Publications	Farm Demonstration	Home Economics	Boys' Clubs	Fairs and Exhibits	Farm Management
Salaries	$202,389.72	$ 7,719.94	$	$94,135.45	$63,659.11	$2,775.50	$2,235.00	$ 266.15
Labor	749.36	28.71	.....	54.00	108.82	14.00	37.25	158.80
Printing and Distribution of Publications	6,620.00	.....	6,620.00	.....	.....	.....	.....	.....
Stationery and Small Printing	4,187.61	1,013.37	.....	837.68	556.19	473.35	85.16	36.05
Postage, Telegraph, Telephone	3,946.83	764.61	.....	126.89	297.54	113.38	184.22	.....
Freight and Express	.....	.....	.....	.....	.....	.....	.....	.....
Heat, Light, Water and Power	13.68	.....	.....	.....	1.68	.....	.....	.....
Supplies	1,321.31	116.85	.....	73.22	331.49	58.30	6.70	.....
Library	215.20	26.00	.....	6.35	25.60	14.01	.....	.....
Tools, Machinery and Appliances	161.12	48.05	.....	4.00	9.02	1.55	.....	.....
Furniture and Fixtures	2,824.84	1,382.05	.....	590.76	229.85	59.60	116.22	22.00
Scientific Apparatus and Specimens	31.50	.....	.....	.....	.....	.....	.....	.....
Livestock	.....	.....	.....	.....	.....	.....	.....	.....
Traveling Expenses	19,544.94	436.71	.....	1,237.69	2,865.98	2,211.27	198.31	81.68
Contingent Expenses	408.03	.....	.....	280.99	74.75	.....	.....	.....
Totals	$242,414.14	$11,536.29	$6,620.00	$97,347.03	$68,160.03	$5,720.96	$2,862.86	$ 564.68

SUMMARY STATEMENT OF EXPENDITURES BY PROJECTS, SHOWING CLASSIFICATION OF EXPENDITURES FROM ALL FUNDS, EXCEPT THOSE FROM THE DEPARTMENT OF AGRICULTURE, USED FOR EXTENSION WORK

	Agronomy Extension	Animal Diseases	Animal Industry	Beekeeping	Cotton Grading, etc.	Dairy Extension	Drainage Extension
Salaries	$6,019.25	$ 350.00	$2,930.47	$ 60.00	$4,126.48	$3,829.85	$ 291.32
Labor	71.51	12.75	25.35	.....	7.00	136.17	.....
Printing and Distribution of Publications	.....	.....	.....	.....	.....	.....	.....
Stationery and Small Printing	238.03	.....	307.55	4.75	34.10	380.92	22.07
Postage, Telegraph, Telephone	165.56	4.00	1,106.06	.....	9.47	213.03	67.30
Freight and Express	.....	.....	.....	.....	.....	.....	.....
Heat, Light, Water and Power	.....	.....	.....	.....	.....	12.00	.....
Supplies	341.36	.....	105.02	.....	.65	268.07	.....
Library	10.36	.....	22.50	6.23	.....	10.00	.....
Tools, Machinery and Appliances	33.50	.....	.....	1.40	.....	48.76	.....
Furniture and Fixtures	237.38	.....	22.40	.....	26.15	38.25	7.65
Scientific Apparatus and Specimens	.....	.....	.....	.....	.....	31.50	.....
Livestock	.....	.....	.....	.....	.....	.....	.....
Traveling Expenses	1,659.99	76.37	2,290.98	823.07	439.36	4,087.32	.....
Contingent Expenses	.....	.....	.....	.....	.....	8.00	.....
Totals	$8,776.94	$ 443.12	$6,810.33	$ 895.45	$4,643.21	$9,063.87	$ 388.34

SUMMARY STATEMENT OF EXPENDITURES BY PROJECTS, SHOWING CLASSIFICATION OF EXPENDITURES FROM ALL FUNDS, EXCEPT THOSE FROM THE DEPARTMENT OF AGRICULTURE, USED FOR EXTENSION WORK

	Horticultural Extension	Negro Boys' Clubs	Plant Diseases	Farm Forestry	Rural Communities	Markets and Rural Organizations	Farmers Institutes
Salaries	$1,370.84	$1,800.00	$.....	$ 666.64	$ 800.00	$6,690.10	$2,663.62
Labor	.....	.....	.....	.....	.....	95.00	.....
Printing and Distribution of Publications	.....	.....	.....	.....	.....	.....	.....
Stationery and Small Printing	7.75	14.80	.....	3.30	.....	172.54	.....
Postage, Telegraph, Telephone	.....	1.35	.....	25.00	.....	868.42	.....
Freight and Express	.....	.....	.....	.....	.....	.....	.....
Heat, Light, Water and Power	.....	.....	.....	.....	.....	.....	.....
Supplies	12.50	6.50	.....	.....	.....	.65	.....
Library	.....	.....	.....	.....	.....	94.15	
Tools, Machinery and Appliances	14.84	.....	.....	.....	.....	.....	.....
Furniture and Fixtures	.....	8.50	.....	83.03	.....	1.00	.....
Scientific Apparatus and Specimens	.....	.....	.....	.....	.....	.....	.....
Livestock	.....	.....	.....	.....	.....	.....	.....
Traveling Expenses	310.99	710.31	281.21	166.57	.....	1,667.13	.....
Contingent Expenses	.....	.....	.....	.....	.....	44.29	.....
Totals	$1,716.92	$2,541.46	$ 281.21	$ 944.54	$ 800.00	$9,633.28	$2,663.62